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THE DOCTOR AS AN EXPERT WITNESS*

ST. CLAIR ADAMS

NEW ORLEANS

There were two statements in the address of Doctor Courtland P. Gray, your President, with which I heartily concur. First, that the medical profession is overworked and underpaid. This condition excites my deepest sympathy, because there is at least one unit in the legal profession who is also overworked and underpaid. For this situation perhaps there is no remedy. Second, that medicine and surgery are progressive sciences. This fact has been put beyond controversy by the wonderful discoveries you have made to eliminate the dread specter of disease and to cure the injuries resulting from accidents. Unhappily, law is not a progressive science. Its progressive mutations are painfully slow and as halting as the movements of the turtle. Its principles rest upon prescription and *stare decisis* is its pillar of cloud by day and fire by night. Our guides are still Coke and Blackstone, enlighted, however, in some small measure by the more liberal principles of Mansfield and Marshall.

I did not come here tonight to talk about law and lawyers, but to take as my text the relation of physicians and surgeons to the public. The contact of the physician with his patient is not, strictly speaking, a public but rather a private relationship. Except when serving as coroners or on boards of health, or with matters pertaining to sanitation, the public relations of the physician and surgeon are those of the average citizen, perhaps not quite as broad as those of the average citizen, because he does not serve on juries. When, then, do physicians and surgeons perform a public duty of the greatest importance? Undoubtedly when acting in the capacity of expert witness. In that capacity he performs a transcendingly important function, both in civil and in criminal cases, materially assisting in the proper administration of public justice. As an expert witness the physician and surgeon sits on the right hand of the judge. He is the sole reliance of the jury and all medical questions are solved as a result of his experience, learning and wisdom.

Since courts were first established and witnesses appeared before judge and jury, the physician has been called as an expert and therefore has always been a necessary part of the machinery of justice. In the past twenty-five or thirty years the physician's contact with the courts and with public justice has been multiplied a hundredfold. This is due to the invention of the automobile and the airship; the enactment of workmen's compensation laws, and to many other causes arising out of the wonders of this machine age. It is amazing but it is nonetheless true, that today physicians and surgeons testify in perhaps one-half of all the lawsuits actually tried in the courts. In Louisiana I know this to be true and I believe it to be equally a fact all over America. Because the physician and surgeon occupies so large a place in the administration of justice, both civil and criminal, appearing as a witness in so many cases in which his testimony is of primary importance, the public has a manifest and paramount interest in the physician in his character as an expert witness.

It must be understood that courts are not

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established for the purpose of staging a combat of wit between lawyers, but for the sole purpose of ascertaining the true facts of a controverted matter, in a business-like way, in order that the judge or the jury may reach a just conclusion and justice be achieved. This is indubitably the central idea involved in the trial of a lawsuit. True ascertainment of the facts and just application of the law to them, is the ideal result the law seeks to obtain. Physicians and surgeons in this vast number of lawsuits are called as witnesses to testily to medical facts because neither the judge, the jury, nor the lawyers know anything about medicine and surgery. When physicians are called as experts in a case, that case is usually decided on their testimony or, at any rate, the amount of the verdict or judgment is founded upon their scientific evidence. This is the reason why their testimony is so important and also why they should be so meticulously careful in its giving. The testimony of the physician and surgeon is either as to facts which he has ascertained by the application of his science, or to his opinion from facts hypothetically put to him. If he testifies to facts obtained by him at the bedside or at the hospital, as to the nature of the disease or the injury, as to his diagnosis of the case and his treatment, he is then in the position of any other witness and his testimony must be judged according to the credibility of the individual. When he testifies to an opinion, resting entirely upon his appreciation of the facts hypothetically stated to him, and upon inferences and conclusions drawn from such assumed facts, the value of his testimony rests not so much upon his credibility, as upon the correctness and integrity of his opinion. The criticism that is sometimes leveled at the medical profession is based in large measure on opinion testimony and seldom on testimony as to facts. It often happens that two sets of medical witnesses, of equal standing and credibility, will testify to opposite opinions, predicated upon identically the same assumed state of facts. While this frequently occurs among psychiatrists in criminal cases where the mental condition of the accused is involved, it also even more frequently occurs in that more abundant class of cases in the civil courts involving questions of tort, testamentary capacity, and other issues.

The burden of criticism against medical testimony arises largely from two causes: physicians qualifying as witnesses to testify upon questions that are beyond their experience and the scope of their own specialty; and exhibiting a zeal and partisan spirit on behalf of the side calling them as witnesses. This is illustrated by the report made to your Association in 1935 by a committee on expert tesimony of which Dr. Roy B. Harrison was Chairman. Among other things, in that report, it was aptly said:

> "There is no question but that the public as a whole, the judiciary and the bar have come to feel that partisanship too frequently colors opinions as expressed on the witness stand by the medical expert, and the general feeling is that many expert opinions, if not actually dishonest or incompetent, are strongly colored by the interest of the witness."

The observations by Dr. Harrison can be illustrated by two cases, out of many, where medical experts exhibited inordinate partisanship and gave testimony in respect to subjects upon which they were no better qualified than the average layman. One of these cases occurred in my practice. The issue involved was whether the decedent, in a workmen's compensation case, died of tetanus, contracted during the course of his employment, or from some other cause. The decedent had been buried some eight months, when, upon the advice of a pathologist, his body was disinterred and subjected to an autopsy. The autopsy necessarily was incomplete because decomposition had destroyed the brain, the spinal fluid, and all of the extremities, nothing remaining but the torso. If the decedent had been infected with tetanus germs the port of entry was the thumb of the right hand, which had been burned with pitch in the laying of some cork insulation. Of course, no tetanus germs were discovered on autopsy, and therefore pathology could not determine the cause of death. If the decedent died from lockjaw the facts had to be established, not by pathology, but by the signs and symptoms exhibited by the patient before death. Notwithstanding the fact that this was a case where a pathologist could be of no assistance

to judge or jury, the pathologist was called as a witness for the plaintiff and testified, not that he found tetanus germs on autopsy, but that, in his opinion, from signs and symptoms, the decedent died of tetanus. A passage from the cross-examination of this witness should serve as a guide to the traveler not to follow the same road.

In further illustration, I have selected a paragraph from the work on "The Art of Cross-Examination" by Mr. Francis L. Wellman. Many lawyers have used the method of cross-examination he employed with success. The writer has frequently used it himself.

> "I remember witnessing some years ago the utter collapse of one of those expert pretenders of the medical type. It was in a damage suit against the City of New York, which I defended. The plaintiff's doctor was a loquacious gentleman of considerable personal presence. He testified to a serious head injury, and proceeded to 'lecture' the jury on the subject in a sensational and oracular manner which evidently made a great impression upon the jury. Even the judge seemed to give more than the usual attention. The doctor talked glibly about 'vasomotor nerves' and 'reflexes' and expressed himself almost entirely in medical terms which the jury did not understand. He polished off his testimony with the prediction that the plaintiff could never recover, and if he lived at all it would necessarily be within the precincts of an insane asylum. I saw at a glance that this was no ordinary type of witness. Any cross-examination on the medical side of the case would be sure to fail; for the witness, though evidently dishonest, was yet ingenious enough to cover his tracks by the cuttle-fish expedient of befogging his answers in a cloud of medical terms. Dr. Allan McLane Hamilton, who was present as medical advisor in behalf of the city, suggested the following expedient:
>
> Counsel: 'Doctor, I infer from the number of books that you have brought here to substantiate your position, and from your manner of testifying, that you are very familiar with the literature of your profession, and especially that part relating to head injury."
>
> Doctor: 'I pride myself that I am—I have not only a large private library, but have spent many months in the libraries of Vienna, Berlin, Paris and London.'
>
> Counsel: 'Then perhaps you are acquainted with Andrews' celebrated work "On the Recent and Remote Effects of Head Injury"?
>
> Doctor: (Smiling superciliously). 'Well, I should say I was. I had occasion to consult it only last week.'
>
> Counsel: 'Have you ever come across "Charvais on Cerebral Trauma""
>
> Doctor: 'Yes, I have read Dr. Charvais's book from cover to cover many times.'
>
> Counsel continued in much the same strain, putting to the witness similar questions relating to many other fictitious medical works, all of which the doctor had either 'studied carefully' or 'had in his library about to read', until finally, suspecting that the doctor was becoming conscious of the trap into which he was being led, counsel suddenly changed his tactics and demanded in a loud sneering tone if the doctor had ever read Page on "Injuries of the Spine and Spinal Cord" (a genuine and most learned treatise on the subject). To this inquiry the doctor laughingly replied, 'I never heard of any such book and I guess you never did either!'
>
> The climax had been reached. Dr. Hamilton was immediately sworn for the defense and explained to the jury his participation in preparing the list of bogus medical works with which the learned expert for the plaintiff had shown such familiarity."

The question is, what is the remedy to remove this rising tide of criticism and by whom should the remedy be applied? Perhaps the best answer is to say what should not be done. Therefore, in my opinion, the remedy is not the institution of the official medical witness, or the creation of a class of medical witnesses called solely by the judges. The creation of such class of witnesses would necessarily work

a fundamental change in our judicial system and not now in existence anywhere in the Anglo-Saxon speaking world. The practical effect would be to create a small coterie of expert medical witnesses who would enjoy the patronage of the particular judge favoring them and such favors would be parceled out in the same way as is other quasi political patronage of the courts. The parties to a litigation should be left free, as at present, to select and employ their own medical experts. This question was learnedly discussed by Sir James Fitzjames Stephen, a celebrated English judge and law writer:

> "This is the question:—Which is right, the present system according to which skilled witnesses are called by each side at the discretion of the parties and are examined and cross-examined like other witnesses, or a proposed system according to which such witnesses should be appointed by the court and occupy a position more or less resembling that of assessors? The matter has been often discussed, especially by medical men. I have the strongest possible opinion in favor of the maintenance of the present system for the following reasons: Our present system provides a definite place and definite rights and duties for the parties, the judge, the jury, and the witnesses. What room there is for any other persons in the proceedings I do not see. It is impossible to say what an expert is to be if he is not to be a witness like other witnesses. If he is to decide upon medical or other scientific questions connected with the case so as to bind either the judge or the jury, the inevitable result is a divided responsibility which would destroy the whole value of the trial. If the expert is to tell the jury what is the law—say about madness—he supersedes the judge. If he is only to advise the court that the prisoner is mad, he supersedes the jury. If he is only to advise the court, is he or is he not to do so publicly and to be liable to cross-examination? If yes, he is a witness like any other. If no, he will be placed in a position opposed to all principle. The judge and the jury alike are and ought to be, instructed only by witnesses publicly testifying in open court under oath. It never would be, and never ought to be, endured for a moment that a judge should have irresponsible advisers protected against cross-examination."

The remedy almost leaps to the eye. It is the registration and classification by organized medicine of medical experts. This remedy involves the preparation of a directory of medical experts, to whom recourse could be had by litigants, lawyers and judges. This suggestion is not novel and is contained in Dr. Harrison's report to which I have previously referred. The application of this remedy would not be by external means by the judges, but internally by the medical profession itself. No good reason exists why the medical profession should be regulated from without when it can be better done from within. Organized medicine requires no coercion to remedy a condition which it recognizes and which it is determined to correct. In addition to the establishment of a directory of expert medical witnesses, medical associations should adopt canons of ethics applicable to the profession when acting as expert witnesses and should impose penalties for their infraction. The American Bar Association and other bar associations have established such rules of professional conduct and, without loss of face or dignity, the medical associations could well follow such example as to medical expert witnesses. I have formulated out of my own and the experience of others, a body of rules for expert medical witnesses which might be usefully considered, as follows:

1. In all cases in which your opinion is asked, arrange for a definite fee for an investigation of the case and for your opinion on the facts set before you, but with the express understanding that you are not to undertake to be a witness unless you are entirely satisfied as to the merits of the case. Make no agreement for compensation based on a contingency or proportionate to a recovery. Such contracts smack of champerty and tend strongly to induce perjured testimony. They have been frowned on by the courts and held to be against public policy.

2. Before going on the witness-stand make

yourself thoroughly familiar with all the facts upon which you are to testify.

3. After acquainting yourself with all the facts bearing upon the case and carefully considering the opinions you would deduce from them, it is well to refresh your memory by reference to the views held by standard writers in relation to the subject in hand.

4. Have a conference, if possible, with the experts of the other side for the purpose of interchanging views.

5. Refuse to give evidence as an expert if you have the least doubt as to the correctness of your opinion founded upon the facts adduced.

6. On the witness-stand let your bearing be dignified and grave; remember that the settlement of valuable property rights or the conviction or acquittal of a human being may depend upon your testimony, and avoid, therefore, any flippancy of manner.

7. In testifying use plain and simple language, avoiding technical medical and scientific terms wherever possible. Common Anglo-Saxon terminology appeals best to the average judge and juryman.

8. Never qualify as an expert upon any branch of medicine in which you have never specialized. To illustrate: if you are a pathologist, refuse to qualify as a clinician, surgeon or neurologist. It is dishonest to dress yourself in borrowed robes.

9. Remember that your answers to questions are taken down, recorded, and often printed, and that the evidence you give this day may be reinvestigated at a subsequent trial, and your opinion in this case brought before you in some other case, so that you should clearly understand each question put to you, and answer it deliberately, carefully and coherently.

10. Answer directly and simply the question which is asked, volunteering nothing beyond what is required to place the facts or opinion requested clearly before the court. You will sometimes be asked in cross-examination to answer a question by "yes" or "no" only, and in case such monosyllabic replies are not misleading you should answer in this way, but if, as is often the case, they give only a part of the truth, it is your duty and your right to explain your answer, so that it may entirely represent your views.

11. It is sometimes difficult for a witness to avoid the unconscious bias which makes him involuntarily hesitate to answer directly a question when he sees it may do harm to the side that employs him; but you are there "to tell the truth, the whole truth, and nothing but the truth", whether it is good or bad for one party or the other, and your straight unbiased answer to every question of examiner and cross-examiner will do much to dignify your testimony and to impress the jury with the sincerity and value of your statements. Never answer in such a manner as to allow even a remote suspicion that you are a partisan.

12. The cross-examiner may attempt to irritate you by his manner or by the character of his questions. It is almost needless to say that when he does this, he considers it a part of his duty to his client. He will usually resort to any legitimate means to minimize the value of your testimony, and will sometimes use even questionable methods to accomplish this. Be careful, clear, honest, and take no offense. You will then deprive him of one of his weapons.

13. If asked a question, the answer to which you do not feel certain of, do not hesitate to say so. It is the wisest witness that knows when to say "I do not know."

14. You may be asked if the work of such and such a writer is an authority, and upon assenting to this, quotations may be cited in opposition to the facts you may have given. Remember that in science, facts themselves are the only authority and that a book simply represents an attempt to present these facts. Books are, therefore, not in themselves authorities. Being sure of your facts, do not allow your judgment to be shaken, however great the reputation of the writer, for even the authors of books are mistaken sometimes and may misstate the known facts. If you desire quotations from other writers to substantiate your statements, you can arrange with the lawyer engaging you to lay such relevant matter before the jury either through yourself or other expert witnesses.

Some find it easy to criticize and some find

the task unpleasant. When I look back over thirty-six years at the Bar, remembering having examined and cross-examined hundreds of physicians and surgeons; when I visualize as an expert medical witness Dr. Rudolph Matas, that great master of medicine and surgery, that learned and upright man known wherever the healing art is practiced, honored by the learned and respected by everyone, who has contributed, perhaps, more to the advancement of the science of surgery than any other living man and who has been a model for all medical experts to follow, I can honestly testify that generally medical expert testimony in Louisiana is competent and honest and in this respect much higher than that of witnesses at large.

The critic always leaves a bad taste in one's mouth and so I shall administer a sugar-coated pill of genuine laudation before I close. In boyhood I thought the military was the noblest of all of the professions. In my mind's eye I saw Alexander building a Greek empire in Asia; I saw Hannibal crossing the Alps to invade Italy; and I dreamed of Julius Caesar at Pharsalia becoming lord of the world, and I read of Napoleon, on the bridge at Lodi and basking in glory in the sun of Austerlitz. I thought that these were great men and war a glorious thing, my immature mind not thinking of the anguish and the pain, the destruction and desolation, the widows' weeds and orphans' tears that follow in the wake of such victories. Only pacifism forgets that the sword of soldiers like Washington and Lee and Grant make it possible for the pens of statesmen like Jefferson and Hamilton and Madison to write such documents of human liberty as the Declaration of Independence and the Constitution of the United States. While still a great admirer of the soldier, with older years and riper reflection has come the opinion that of all the "professions that go the primrose way to the everlasting bonfire", that of the physician and surgeon is the noblest.

It preserves and does not destroy; it does not create pain and suffering, but heals and assuages them; it seeks the cause of disease and devises the means of its abolition; it supervises our entrance into the world, ministers to our ailments throughout life and eases our pain and suffering at our death. No other profession can suggest names more entitled to our veneration than the medical profession. The name of no king or soldier or statesman, scientist, poet or author is fit to be written beside that of a Pasteur or that of hundreds of others of equal nobility.

PRESENT STATUS OF FEVER THERAPY*

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As is well known, fever reactions can be produced by various methods, among which are the injection of foreign proteids, injection of turpentine in olive oil, and the injection of malarial organisms as is carried out by the Wagner-Jaureggs procedure in the treatment of syphilis. These methods, however, cannot always definitely be controlled, thus leaving the physical methods as the ones of choice in the induction of artificial fever. During the past few years, and particularly during the past three years, a remarkable wave of enthusiastic study has been carried out in fever therapy. This study has included various methods such as hot baths, diathermy, inductothermy, radiothermy, radiant heat and air-conditioned cabinets. Through trial and experience, information is gradually being gathered concerning the most practical apparatus for use; the best methods of giving the treatment in the method selected, and the complications which may arise following treatment, together with the prevention of such complications. In addition, we are learning what diseases should or should not be given fever treatment, as well as the amount of treatment that can be tolerated in those receiving it.

It is not the purpose of this paper to attempt to point out the best method to use, except to say that the method used must be one that gives a maximum of safety and comfort to the pa-

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†From the United States Marine Hospital, New Orleans.

tient at the range of fever required. At best, the patient is not infrequently brought to the border line of disaster, therefore, the apparatus must be the best available and, equally important should be operated by well trained and careful workers.

We shall attempt, as far as possible, to discuss the various phases of fever therapy with particular reference to the air-conditioned cabinet, namely, the Kettering hypertherm, which is the apparatus in use at the New Orleans Marine Hospital and in about twenty other hospitals in the United States. This apparatus has been described in the literature, and demonstrated to many of you at the Marine Hospital and no doubt elsewhere. Briefly described, it is a large cabinet made of celotex and heated by a 1500 watt electric heater and humidified by an electric humidifier. The heat and humidity are controlled by a thermostat and humidostat, respectively. The warm humidified air is circulated over the patient by means of two small electric blowers. There is a sliding door on each side of the cabinet through which the patient may be observed, treatments such as intravenous medications given, blankets adjusted, rectal temperature taken and blood pressure determined. During the past few months some changes in the operation of the fever chamber have been made which have resulted in a shorter and better period of induction and the easier maintenance of fever throughout the treatment. The relative humidity in the cabinet has been changed from a 35 to 40 per cent range to a 50 to 55 per cent range. At the same time, the dry bulb temperature is dropped from 150-155 degrees F. level to 140 to 145 degrees F. During the fever maintenance period, the air-flow rate has been reduced about one-half. This has resulted in a marked decrease of skin burns and also permits of less covering of the patient during the induction phase of the treatment.

REPORTS FROM THE LITERATURE

In making a survey of the literature, it was found that many diseases have been treated with fever therapy.

Pulmonary Tuberculosis—Duncan and Mariette[1] reported on 34 cases treated by the Kettering hypertherm, baths and general diathermy, in which moderate improvement occcured in 21 per cent, slight improvement in 52 per cent, no change in 21 per cent, and 6 per cent became worse.

Benjamin[2] treated 11 cases in negroes and reported that 10 died, but probably no sooner than they would have under ordinary circumstances.

Intrinsic Intractible Asthma—Metz[3] reported six cases in which complete cessation of symptoms resulted in all except one. The five successfully treated cases remained symptom free for as long as seven months.

Sheldon[4] gave fever treatments to 14 patients with asthma; four were unimproved, four had slight to moderate improvement, and six were markedly improved or had complete but temporary relief.

Three cases of asthma were treated by Hefke[5] without obtaining beneficial results. However, the treatments were reported as probably too short.

Chorea—Schnabel and Fetter[6] reported ten cases of Sydenham's chorea treated, of which three were classified as severe, five moderately severe, and two as relatively mild, and in which the duration of the disease varied from three and a half weeks to two years. Associated rheumatic endocarditis present in six cases was found not to be a contraindication for fever treatment. Of the 10 cases of chorea eight were cured.

Schmidt[7] reported that six of seven cases treated by him responded very favorably.

Hefke[5] reported definite improvement in two cases treated.

Desjardin and Popp[8] reported nine cases of chorea all of which showed improvement.

Subacute Bacterial Endocarditis—Eight cases were treated by the following workers: Simmons[9] reports one case in which there was reduction in temperature and night sweats and in the control of pain. Schnabel[10] reported two cases in which there seemed to be slight improvement for a time but both died later. Faget[11] reported one case in which three fever treatments were given; the patient showed some improvement for a time but died in a few months from cerebral embolism. Bierman[12] reported one patient who died shortly after a fever treatment from multiple embolisms.

Freund and Watts[13] treated three cases with excessive hyperpyrexia at a temperature of 107 to 108° F. for several hours, followed by a higher rise of temperature of 108 to 109° for one hour. Treatments were given at weekly intervals for four or five treatments. General physical improvement was obtained as well as a lower temperature for months afterwards. The blood culture remained positive, however, for Streptococcus viridans.

Ocular lesions—In reporting on results obtained in cases of ocular lesions, Doub[14] reported nine cases of corneal ulcer with good results in eight following one to two fever treatments. He also reported two cases of interstitial keratitis and both of these cases cleared up under such therapy.

Results in 11 patients with interstitial keratitis treated by Culler[15] were not quite so satisfactory; he states only that the duration of the disease and the tendency towards recurrence were lessened following adequate fever therapy combined with chemotherapy.

Dementia Paralytica—Simpson[16], in reporting on 20 cases of dementia paralytica, each completing a course of 50 hours of fever therapy plus 30 injections of chemotherapy, states that 14 have been socially rehabilitated, four were accorded 50 per cent clinincal improvement, and two were regarded as having received 25 per cent improvement. No relapses have occurred so far.

Tabes Dorsalis—Simpson[16] reported results in 10 patients afflicted with tabes dorsalis. Ataxia was present in nine; lancinating pains and gastric crises were present in all. One patient with ataxia of three months' duration and another with ataxia of two years' duration were restored to normal gait. Six patients obtained some improvement in gait and two showed no change. The root pains were abolished in all save one .

Chronic Infectious Arthritis—Stecher[17], Hefke[5], Hench[18], et al reported treatment in 106 cases; 49 had moderate to marked relief; 57 had little or no improvement.

Acute Infectious Arthritis—Stecher[17] and Hefke[5] reported results in 36 cases of acute infectious arthritis. There was moderate improvement to complete recovery in all but seven cases in which there was no improvement.

Gonorrhea—Boak, Carpenter and Warren[19] reported recovery in 80 per cent of 118 cases of gonorrhea, but it was not clear whether these were acute or chronic cases.

Hench[20] reported 95 cases of acute gonorrhea in which 80 to 90 per cent obtained bacteriologic and clinical cures.

Acute Gonorrheal Arthritis—Stecher[17], Hefke[5], Schnabel and Fetter[6], Hench[18] et al reported 59 cases. All received from moderate improvement to complete recovery.

Faget[11] reported six cases of gonorrheal arthritis all recovering following the use of fever therapy.

Chronic Gonorrheal Arthritis—Schnabel and Fetter[6], Hench[18], Simpson[21] et al subjected 28 cases of chronic gonorrheal arthritis to fever therapy; 27 were recorded as having had modrate improvement to complete recovery, one was unimproved.

Fever therapy has been tried in other diseases as endarteritis obliterans, renal tuberculosis, multiple sclerosis, scleroderma, Parkinson's disease, osteogenic sarcoma, thromboangiitis obliterans, chronic otitis media, acute and chronic osteomyelitis, toxic infectious psychosis, bronchiectasis, epidemic encephalitis, chronic sinusitis, neuritis, nephritis, pyelitis, and many other conditions. Favorable results have been obtained in some of these conditions; in others the results have been poor. However, not sufficient work has been done in any of these diseases definitely to determine the value of fever therapy therein.

FEVER THERAPY AT THE U. S. MARINE HOSPITAL, NEW ORLEANS

The Kettering hypertherm was first used in the New Orleans Marine Hospital on June 1, 1934. Since that time 203 patients have received a total of 1,141 treatments, an average of approximately five treatments per patient. We will report, in this paper, 175 completed cases. Twenty-eight cases are not reported since sufficient data have not been collected.

Except in some cases where it was contraindicated the course of treatment carried out in our work consisted of elevation of the temperature of the patients in the heat cabinet from

106° to 107° F. for a period of five hours at two to three day intervals for most conditions. In certain types of cases, especially in syphilis, treatments were given at weekly intervals, at temperatures ranging from 105 to 106° F.

Acute Gonorrhea—Seventy-eight cases of acute gonorrhea including urethritis with and without complications were treated. Thirteen failed to complete treatment. Of the 65 completing treatment 45, or 69 per cent, obtained complete recovery .

Chronic Gonorrhea—Sixty-eight patients with chronic gonorrhea including urethritis with and without complications were treated. Twelve failed to complete the treatment. Thirty-eight patients, or 67 per cent of the 56 who completed treatment recovered completely. Of those who did not recover completely, in both acute and chronic conditions, there was some evidence of a remaining urethritis, prostatitis or arthritis at the time that treatment was discontinued.

Considering gonorrheal urethritis alone, as well as a few of the complications alone, we have the following results to present:

1. Acute gonorrheal urethritis—65 cases completed treatment; 51, or 78 per cent, recovered.

2. Chronic gonorrheal urethritis—56 cases completed treatment; 44, or 78 per cent, recovered.

3. Acute gonorrheal epididymitis—62 cases were treated; 61 cases recovered, the majority having practically a normal epididymis after the second treatment. In many cases the pain was practically gone after the first treatment.

4. Acute gonorrheal arthritis—20 cases completed treatment; 11 recovered; five were markedly improved and four were moderately improved. One of the latter group attained complete relief of pain with physiotherapy.

5. Chronic gonorrheal arthritis—15 cases completed treatment; 10 recovered; three markedly improved; two showed improvement but later had return of symptoms.

6. One case of gonorrheal osteomyelitis was treated with fairly satisfactory results. This case will be reported later in this paper.

Miscellaneous conditions treated at this hospital:

Granuloma inguinale—One case was treated; two courses of treatment, one consisting of 10 treatments and one consisting of eight treatments, were given with no improvement.

Chronic infectious arthritis—Three cases were treated; one showed slight improvement; one showed slight improvement with incomplete treatment; one showed moderate improvement, with some pain remaining due to bone changes.

Chronic hypertrophic arthritis—Two cases were treated; both improved but failed to get complete relief.

Acute arthritis, cause undetermined—One case was treated; recovered.

Epididymitis, acute, cause undetermined—Two cases were treated; both recovered.

Epididymitis acute and prostatitis acute, cause undetermined—One case was treated; case improved but treatment was incomplete.

Tuberculosis of lungs, spine, and kidneys—One case was treated; unimproved.

Chromic dermatitis—One case was treated; unimproved.

Torticollis—One was treated; recovered.

Dysentery, chronic, bacillary—One case was treated; improved, but patient did not remain to complete treatment.

Encephalitis—One case was treated; patient has not been checked since treatment.

Urticaria, persistent—One case was treated; improved.

Syphilis of nervous system—Thirteen cases were treated; all showed improvement but it is too early to determine value of this treatment. Chemotherapy was given before and during period of fever treatments. No arsenicals or heavy metals given on day of treatment.

The following case reports are presented to outline, in more or less detail, the management and results in fever therapy in our hands.

Case 1. H. B., white male, aged 21 years, gave a history of having gonorrhea since May 15, 1935. On June 6 he was working in the hold of a steamship when he slipped and struck his left wrist against a bundle of shingles. He had pain for a few minutes at the time but he had no more discomfort until the following morning when the wrist began to swell and became painful. His symptoms continued to increase gradually and by the time he entered the Marine Hospital on June 21, 1935, he had moderate swelling and pain in the left hand, wrist, and forearm. His fever on ad-

mission was 38.8° C., pulse 130. The patient appeared acutely ill. Roentgenogram made on July 18 showed almost complete destruction of the lunate and navicular bones of the left wrist and lower inner portion of left radius. An incision was made on the dorsum of the hand and only bloody fluid obtained. The swelling decreased slightly but pain and discomfort persisted. The operative wound had healed by the time fever therapy was instituted. Urethral smear was found to be positive for the first time on June 29, 1935. Fever therapy was begun on July 1 and definite improvement resulted after each treatment. Treatments were given at four to five day intervals during July and August. By the end of August the swelling was gone but some soreness was noted from time to time. A few more treatments were given with longer intervals so that by November 14, he had received a total of 20 treatments. Roentgenograms which were made throughout the course of this treatment showed a gradual improvement in the bone condition. When the patient was last seen on November 29, 1935, he was able to close his hand fully but there was a definite limitation of motion of supination and some limitation in flexion and extension of the left wrist. There was some backward displacement of the ulna. The motions of the wrist were painless and no tenderness of the joint was found on palpation. Roentgenogram taken on November 19, 1935 showed that there was some bony ankylosis of the carpal bones. The urethritis had cleared up by the end of the ninth fever treatment on August 6 and has not recurred since.

We were of the opinion in this case that the condition represented a soft part gonorrheal infection which later involved the carpal bones and distal end of the radius. While at present this patient still has and always will have some disability in this joint, we feel that he has a fairly useful extremity.

Case 2. G. R. C., white male, gave a history of gonorrhea beginning October 6, 1934. On November 25, 1934, he began to have pain and swelling of both hands and knees. The swelling and pain were severe. Urethral smear was positive for the gonococcus. He was given 13 fever treatments beginning December 6, 1934, and ending February 28, 1935. When he left the hospital after the last treatment he had no urethral discharge and all joints were normal. He has been examined repeatedly since then and was last seen on November 27, 1935, at which time he still had had no recurrence of arthritic symptoms or urethritis. He has been engaged in working on board a steamship since March, 1935.

Case 3. D. C., white male, gave a history of gonorrhea since July 26, 1935. Urethritis gradually decreased on local treatment but was still present on September 6, 1935, when he first noticed soreness in left epididymis. By September 13, 1935, the testicle was the size of a large orange and was extremely painful. One fever treatment was given on September 13, 1935, and on the following morning the testicle had reduced two-thirds in size and was painless. On the second day after the treatment the testicle was normal in size. The urethritis had cleared up. He was observed for a month thereafter and repeated efforts were made to find evidence of infection but all gave negative results.

Case 4. J. B., white male, had an onset of gonorrheal urethritis on October 10, 1934, followed in a few days with marked pain, tenderness and swelling of both ankles, right hand and wrist. Four fever treatments were given beginning on October 30, 1934, and ending on November 16, 1934. Arthritis and urethritis cleared up after the fourth treatment. All joint movements were normal.

Case 5. W. T., was a colored male, who gave a history of having had gonorrhea since November, 1934. He was given 14 fever treatments but at the end of the fourteenth treatment his urethral discharge was still positive for gonococci. This is an example of a case that did not do so well.

PHYSIOLOGICAL MANIFESTATIONS

It might be well, at this point to consider certain physiological manifestations which take place during and after treatment. Fatherree[2], in a review of the literature, has covered this phase of the subject quite thoroughly and we think that the findings of all workers are pretty much in accord, but there is a considerable amount of experimental work still under way which should augment the information already obtained.

There is invariably an early rise in blood pressure which is of short duration; this is followed by gradual decrease of blood pressure to a point well below the usual reading for the patient.

The pulse rate during the fever runs from 135 to 155 per minute.

With reference to blood chemistry, creatinine, urea, uric acid, phosphorous, calcium and sugar, all usually show no change but may be slightly increased. If saline is not given to the patient during treatment there will be a marked decrease in chlorides. There is usually a slight alkalosis, a decrease in CO_2 combining power of the blood and an increase in oxygen content and capacity of venous blood.

The blood picture shows the most interesting change. There is a fluctuation of the white

cells throughout treatment. The cell count varies from 10,000 to 50,000. Neutrophilic polymorphonuclear leukocytes constitute the most of the early response. Lymphocytes, early in the treatment, drop to a low count and may be as low as 200 to 500 cells. Only rarely do they show a reappearance tendency during the treatment. This reappearance of lymphocytes is usually for a short time only. There is a reappearance of lymphocytes a few hours after the treatment. Concerning the neutrophilic polymorphonuclear leukocytes, there is some discussion as to whether or not there is a release of cells from a reserve deposit. The Arneth and Schilling count showing a shift to the left indicates rather that there is an increased bone marrow delivery of granulocytes. The leukocytes return to normal a few hours after the teatment is completed; at least most cases have returned to normal by the following morning. One of our cases, recently, who had a severe gastrointestinal upset for three days, continued to run a white count of 35,000 but this count returned to normal after the symptoms subsided. The red cells are unchanged as a result of the fever therapy. The data are conflicting as regards the effect of fever therapy on the blood immune bodies.

The rationale of fever therapy is not well understood. The accompanying leukocytosis may be associated with a phagocytic action. The increased temperature may bring about an acceleration of the natural defense mechanism of the body, and the thermal death time of the organisms involved also enters for consideration, particularly in gonorrhea and syphilis.

REACTIONS IN FEVER THERAPY

There are several types of reactions which may occur as a result of fever treatment but their occurrence has decreased considerably in the light of added knowledge and experience.

Restlessness is not of uncommon occurrence but can be quite well controlled by using amytal or nembutal before treatment begins, and by giving codeine, morphine or dilaudid during treatment.

Abdominal cramps, nausea and vomiting have been fairly well minimized by the use of 500 c.c. of a 10 per cent glucose solution given intravenously in saline medium as recommended by Desjardin. We had two cases, however, in which vomiting and abdominal pains persisted for three to seven days, respectively, despite the usual medication, but finally subsided without any noticeable damage.

Tetany is of rather rare occurrence but is usually prevented by giving 6 per cent saline solution by mouth during the treatment. We have found that most patients will take from 3,000 to 7,000 c.c. during the course of treatment. Occasionally a patient is not able to take the saline by mouth during the maintenance period; this is overcome by giving more fluid before and during the early part of the treatment and by giving intravenous saline during the maintenance portion of the treatment. Under this procedure tetany occurs infrequently; however, when it does occur it is controlled by giving calcium gluconate intravenously or by giving inhalations of CO_2 in oxygen.

Herpes of the lips occurred in about 25 per cent of our cases during the first treatment and usually cleared up shortly after the second treatment. It is claimed by Benjamin[2] that ammoniated mercury ointment, U. S. P., applied to the lips several times during the treatment prevents this condition. We had one case with corneal herpes occurring after the eighth treatment. Treatment was discontinued and the cornea cleared up in about two or three weeks. We know of no method advocated for the prevention of this condition. However, it is of rare occurrence and when it does occur further treatments are contraindicated, at least until the herpes has cleared up.

Headaches are not infrequent after treatment but are never troublesome.

Vasomotor collapse is infrequent and can be further minimized by careful selection of patients and by cutting down the fever when the danger signs appear. Simpson[23] states that in recognizing vasomotor collapse, dependence is placed chiefly upon the rate and character of the pulse; no great concern may be given if the pulse remains below 160 and is of good quality. When the pulse rate exceeds 160 and is of poor quality treatment is discontinued and restorative measures are instituted. Hypertonic glucose solution, usually 100 c.c. of 50 per cent solution is given intravenously when indicated, inhalation of oxygen with 7 per cent

concentration of CO_2 is instituted immediately, and stimulants as adrenalin and caffeine sodium benzoate are given. During the course of treatment the nurse stands almost constantly at the patient's head and eats her luncheon from a tray in order to keep careful record of the temporal pulse.

Statistics gathered from the Mayo Clinic, Miami Valley Hospital at Dayton, Ohio, and U. S. Marine Hospital, New Orleans, show over 900 patients treated with only one death resulting thus giving slightly over .1 of 1 per cent mortality. There have been no deaths in our series of 203 cases. Some deaths have been reported by other workers but lack of complete details of the types of cases in which these deaths occurred prevent us from reporting these statistics. It should be pointed out, however, that Hartman and Major[24] reported some very interesting autopsy findings in two cases. One case died 20 hours after the fever treatment and the second case died 10 days after the fever treatment. Findings, which were practically the same in both cases, were:

(1) Hemorrhagic encephalitis of the base of the brain with ring hemorrhage around the vessels.

(2) Acute parenchymatous degeneration of the liver and kidneys.

(3) Degeneration of the zona fasciculata of the adrenals.

(4) Pneumonia, hemorrhagic, lower lobes in one case, and bronchopneumonia with edema and congestion of lungs in the second case.

Experiments, by the same writers, conducted on dogs subjected to hyperpyrexia, demonstrated changes which paralleled those found in the human, the most important being engorgement of capillaries, hemorrhage and degeneration. The brain was particularly affected, showing hemorrhagic encephalitis; the lungs showed hemorrhagic pneumonia; the adrenals showed degeneration in the cortex with hemorrhage; the liver presented marked engorgement of the sinuses with extensive mid-zonal necrosis and hemorrhage in a few instances; the kidneys showed engorgement of the glomerular tufts and degeneration of the tubular epithelium, especially in the convoluted portions.

CONCLUSION

Not sufficient work has been done in many diseases as yet to permit evaluation to be placed upon the results obtained in fever therapy. The First International Conference on fever therapy will be held in New York City, in September, 1936, and it is believed that sufficient work will have been done by then to arrive at definite conclusions in many conditions. Suffice it to say we believe that fever therapy occupies a place in therapeutics in certain diseases. It is our opinion that adequate information has already been obtained to enable us to say that it has definitely found a place in the treatment of gonorrhea and its complications, syphilis of the central nervous system, asthma, chorea and acute infectious arthritis.

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PILONIDAL SINUS*

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Pilonidal sinus is a clinical term applied to a common pathologic process occurring in the sacrococcygeal region characterized by the presence of single or multiple sinuses with openings on the skin surface which may or may not be accompanied by an acute inflammatory process and which become manifest clinically from infancy to old age.

In a previous publication[1], I have already shown that these sinuses are congenital and develop from the medullary canal. Therefore, a brief review of their embryologic origin will be given in order that their clinical manifestations can be easily interpreted. After the formation of the ectoderm and entoderm the primitive dorsal streak occurs. Folds occur on either side of the primitive streak and finally coalesce, forming first the medullary groove and finally the medullary canal. This medullary canal later becomes the central nervous system by a process of evolutional growth of the primitive ectodermal cells. The caudal tip of the medullary canal closes later than the cephalic end and, therefore, has the potentiality of being influenced by environmental conditions, resulting in abnormal growth and development. That this is probable is revealed by the high incidence of abnormalities in the osseous system at the level of the lumbo-sacral regions[2]. The caudal end of the medullary canal becomes closed off in the tail anlage from the rest of the canal, forming a single, epithelial-lined sac known as the "vestiges medullaire coccygiens"[3]. The lumen of the medullary canal above the cystic dilatation becomes obliterated to form the future filum terminale. According to Tourneaux, this cystic dilatation in the tail anlage at the third month is attached to the skin and there may be communication from this cystic cavity to the surface of the skin. Due to the unequal growth of the osseous tissue and the soft parts, the neural canal, which is attached to the skin, becomes bent in the form of a loop. The deeply situated part of the loop is attached at or near the sacrococcygeal region, while the superficial limb of the loop which is attached to the skin extends somewhat cephalad up over the sacrum, the former being known as the "segment coccygien direct", the latter as the "segment coccygien reflecti". I, too, have found this same arrangement clinically in cases of pilonidal sinuses. During the fourth month the deeply situated loop atrophies while the superficial gives origin to pavement-lined cystic cavities, which in turn disappear after the sixth month. However, traces of them may be recognized at birth. Mallory[4], in a series of fetuses three to four months old, found a cavity and at times a canal lined by pavement

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epithelium. This was connected to the skin by openings on the surface of the skin or was separated from the skin and situated close to the periosteum over the sacrococcygeal region at the site of or near the sacral hiatus. The above description is that of the normal development of the medullary canal occurring in the embryo and fetuses. If any part of the whole of these structures remains postnatally we then have a pathologic state recognized clinically as pilonidal sinus.

As the medullary canal completely closes before any of the skin appendages (hair follicles, hair shafts, sebaceous glands at the second and third months, and sweat glands at the fifth month) make their appearance, it would of necessity follow that any remnant of the medullary canal persisting into postnatal life would in all probability have the ability to form only the most primitive of the skin appendages; i. e., hair follicles and hair shafts. These primitive appendages occur only in those remnants remaining near the skin, disappearing entirely as the spinal cord is approached. This I have found to be true from a study of many serial sections of tissue removed at operation from patients suffering from pilonidal sinus. If these sinuses are so intimately associated with the development of the central nervous system, one should find embryonic nervous tissue associated with the sinus tract in some of the cases that fall in Groups 3 and 4. I have demonstrated this in a patient with a pilonidal sinus which extended through the sacral hiatus into the sacral canal up to and attached to the dura. The nervous tissue was embryonic in character and was determined by differential stains to be glial tissue.

The occurrence of similar sinuses along the midline over the dorsal aspects of the spinal canal has been reported by Walker and Bucy[5]. These authors reported a case in which the sinus was at the level of the fourth dorsal vertebra. The sinus extended from an opening on the skin surface through the vertebra and dura, being attached to the spinal cord proper. The sinus tract was lined by stratified squamous epithelium containing hair follicles and hair shafts, but no sebaceous glands or sweat glands. This patient had a small abscess at the junction of the sinus with the cord.

Oehlecker[6] has shown that the caudal ligament is mesenchymal tissue which has its origin from the tip of the last coccygeal vertebra, and is attached to the skin in the tail bud. As the caudal vertebrae grow with greater rapidity than the overlying skin and soft parts, the caudal ligament is turned towards the cephalic end of the embryo. If the development of the caudal ligament does not proceed normally, the ligament remains short and pulls the skin into the form of a dimple over the coccyx. The presence of a sacrococcygeal dimple is of common occurrence in babies, but gradually disappears. If the caudal ligament persists into postnatal life, as a rule it is very short and holds the skin in close approximation to the coccygeal vertebrae. As the nates grow outward and the individual reaches the adult type the simple sacral dimple is converted into a sinus. This sinus points toward the anus in contradistinction to the true pilonidal sinus which points towards the cephalic end. Where the caudal ligament attaches itself to the skin there is an area devoid of all skin appendages which has been termed by Oehlecker[6] as the "sacral bald spot". I have confirmed Oehlecker's[6] observations in a study of tissues removed from children and adults suffering with sacrococcygeal dimples and sinuses.

Therefore, from my clinical, embryologic, and histologic studies, over a period of twelve years, of tissue removed from patients suffering with pilonidal sinuses and cysts, it can be definitely stated that all true pilonidal sinuses and cysts develop from the caudal end of the medullary canal and that the sacrococcygeal dimple has its origin from an abnormal development of the caudal ligament.

From an embryologic standpoint I have divided the pilonidal cysts and sinuses into four types, as follows: (1) the simplest of all the types: the sacrococcygeal dimple and its counterpart, sacrococcygeal sinus; (2) all of the true pilonidal sinuses and cysts and their ramifications that are confined in the sacrococcygeal region without penetrating the sacral canal; (3) all of the true pilonidal sinuses and cysts, multiple or single, that penetrate the sacral

hiatus and extend for varying distances into the sacral canal, but are not continuous with the subdural space though the sinus tract may be attached to the dura[1]; and (4) the rarest of all the true pilonidal sinuses and cysts, those penetrating the sacral canal and continuous with the subarachnoid space. Cerebrospinal fluid in small amounts makes its exit from the external opening of the sinus on to the surface of the integument in the sacrococcygeal region[7 8].

The pathology of this condition is rather simple. All of the sinuses and cystic dilatations of the sinuses reveal varying degrees of inflammation of the surrounding tissue and unequal desquamation of the epithelial lining of the tract and its cystic dilatations. The inflammatory reaction in the uncomplicated case is that of a chronic type being characterized by the presence of round cell (plasma-lymphoid and endothelial) infiltration. However,when there is abscess formation, the typical histologic characteristics of acute inflammation are added to the pre-existing chronic inflammation. The predominating cell is the polymorphonuclear leukocyte. The desquamation of the epithelial lining varies from simple clefts to complete loss of the entire epithelium. There were no sebaceous and no sweat glands present in the serial sections of pilonidal sinuses and cysts that I have studied.

SIGNS AND SYMPTOMS

In the uncomplicated pilonidal sinus there are only three signs and no symptoms. The three signs are: first, an opening on the skin surface where the sinus communicates with the integument. There may be single or multiple openings; I have observed as many as five openings on the skin surface over the sacrococcygeal region. Second, protruding from these openings hair is often seen which is immature and of fine texture. There is an exception to the above and that is the sacrococcygeal dimple that has been converted into a sinus in which no hairs are present, due to the absence of skin appendages at this site[6]. Third, occasionally there is a slight discharge from the sinus which soils the patient's clothing. This discharge is often called sebaceous secretion, but the discharge is composed of desquamated and macerated epithelium.

When symptoms are present it is always significant of secondary abscess formation. An abscess occurring in the region of the sinus on either side of the midline is the most common complication. The symptoms are then not of the sinus but of an acute abscess and the pilonidal sinus is only discovered at the time of the examination. In some of the cases there will be a history of repeated abscess formation and in this type of case there will be multiple accessory sinuses. I have seen as many as five accessory sinuses. In one case seen in the army in 1918, the entire buttocks on both sides was the site of multiple abscess and sinus formation with scarring as a result of the abscess formation and surgical incisions, the true condition, pilonidal sinus, never having been recognized. The sinus of the true pilonidal sinus (Types 2, 3, and 4) points inward and upward towards the sacral hiatus and occasionally up over the sacrum, whereas the sinus developing from a sacrococcygeal dimple extends downward and backwards and points towards the anus. The latter type is frequently diagnosed as fistula-in-ano.

The diagnosis is not difficult if one remembers that the presence of one or more sinuses in the sacrococcygeal region denotes the presence of a pilonidal sinus, with or without cystic dilatations. The most common complaint is pain in the sacrococcygeal region which is invariably due to the presence of a complicating abscess. Therefore, in every patient with an abscess in the sacrococcygeal region an effort should be made to reveal the presence or absence of an associated pilonidal sinus. One should, by the use of a probe as well as by the injection of lipiodol into the sinus, determine the type of pilonidal sinus present. I believe that the preoperative determination of the type, extent, and associated cystic dilatations, whether the sinus is a true pilonidal sinus or a "sacral dimple sinus", and if the sinus tract enters the sacral canal, its extent into the canal, will predetermine the incidence of recurrence. As the most accurate method of determining the extent, dilations, and their ramifications is by injection of lipiodol, one should always inject the sinus

and obtain anterior-posterior and lateral roentgenograms of the sacrum and coccyx. If there is a discharge of clear watery fluid present, one is then dealing with one of the rare types (Type 4), and the tract should not be injected as the sinus is continuous with the dura and the patient may develop meningitis. Therefore, every patient should have a careful examination of the sacrococcygeal region to determine the presence of a pilonidal sinus. They should all be diagnosed and removed surgically before infection has complicated the lesion.

TREATMENT

The treatment consists of complete surgical excision of the entire sinus tract and its cystic ramifications. The extent of the tract having been predetermined, one may wish to inject the sinus tract in order that complete removal will be obtained at operation. If one wishes to stain the tract, any one of the common dyes will suffice. Gentian violet and brilliant green produce a good stain and are recommended. The dye solution should never be injected at the time of the operation for obvious reasons. At least daily injections should be made for three days before operation, the last injection being given the day before operation. If this technic is followed, there will result a deep staining of the sinus tract and all of its ramifications, and the dye solution will not be running all over the operative field and the tissues.

If an abscess secondary to the pilonidal sinus is present, a very common complication, one should treat the abscess by incision and drainage, deferring the excision of the sinus tract for a future date, preferably four to six months. This allows the infection to subside and the surrounding tissue to develop an immunity, and the surgical excision can then be done with safety. Multiple sinuses secondary to previous abscess formation are no contraindication to surgical excision. I have excised pilonidal cysts with five accessory sinuses produced by previous abscess formation and obtained primary healing of the wound.

The technic of the operation is very simple. The extensive dissections with plastic flap operations to close the defects are entirely unnecessary and, in fact, are frequently harmful. When there are secondary sinuses, the primary pilonidal sinus should be removed by an elliptical incision and the accessory sinuses by lateral incisions. This minimizes tissue removal and promotes wound approximation without tension and rapid wound healing. Where there has been no previous infection of the sinus tract one may make an incision directly into the sinus tract through its entirety, then proceed to dissect the tract from the surrounding tissue. This procedure creates a very small wound, and one that is closed with ease, and the convalescent time is greatly shortened. When it is necessary to extend the dissection to the sacrococcygeal periosteum and when there has been a previous infection, the wound is closed with drainage. A large sea sponge applied over the incision with pressure prevents oozing, decreases secretion, and promotes agglutination of the wound surfaces, therefore decreasing healing time. I have used this procedure since 1923 without untoward results.

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DISCUSSION

Dr. Ambrose H. Storck: In his study of pilonidal sinus, Dr. Gage has accomplished two things: He has made an original contribution by offering a reasonable explanation of the origin of this type of sacrococcygeal anomaly, and he has classified pilonidal cysts, and has organized the facts concerning these developmental defects from the standpoint of clinical practice.

Before the rather frequent occurrence of sacrococcygeal dermoid, or pilonidal sinus was generally appreciated, many of these lesions were overlooked, or at least were not recognized until infection and abscess formation supervened, and even then treatment in many cases was limited to incision of the recurring abscesses. On the other hand, for some years past, there has been a ten-

dency routinely to resort to radical treatment, consisting of extensive resection of the sinus and surrounding tissue, sometimes combined with the shifting of gluteal skin and fat. Although wide excision is often necessary when there is much infection in the surrounding gluteal fat, in many instances a much less radical procedure is quite sufficient, and necessitates only a relatively short period of hospitalization.

The injection of pilonidal sinuses with iodized oil or a dye solution frequently presents some technical difficulties. The opening into the tract may be quite small, requiring the injection of a local anesthetic followed by dilatation. In order to prevent reflux of the injected solution, the tissue around the opening of the sinus may be squeezed tightly against the catheter or needle, whichever is being used, by means of a Smith hook or Allis forcep.

Dr. Gage has so thoroughly considered the embryology, pathology, clinical diagnosis, and treatment of pilonidal sinus that I am sure this piece of work will remain as one of the important contributions to the subject.

THE COMMON SIGNS OF BRAIN TUMORS*

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The presentation of a paper on brain tumors is not inappropriate in a symposium on cancer, since a great number of such tumors, including all of the gliomas, are of a malignant nature. The principles of their management, furthermore, are the principles of the management of cancer elsewhere in the body, the chief differences being in matters of technic. An endeavor will be made to present the subject in a manner acceptable to men in general practice, without mention of specialized refinements in diagnosis, intricate syndromes and involved terminology, although it is realized that so elementary a discussion can be of little interest to men who have done special work in this field.

It may be stated categorically that brain tumors produce some signs and symptoms because of a general increase in intracranial pressure, and other signs and symptoms because of the particular region affected by them which makes them truly focal. On the other hand, it must be remembered that any intracranial lesion may, by pressure, traction, or interference with the circulation, so influence a more or less distant region as to produce false localizing signs. The same situation may also arise because of the interference of the lesion with connecting fibre tracts, pressure on a cerebellar peduncle being an example. It must be emphasized, too, that the present trend of thought is definitely away from the old idea of considering the brain as a collection of more or less distinct centers intimately connected but functioning independently, and toward considering it as an organ with some specialized portions but functioning as a single whole.

The cranial cavity is normally filled with brain, blood, and cerebrospinal fluid, the arrangement being such that considerable variation from the normal may occur before there is evidence of serious mischief. In the presence of an expanding lesion, however, pressure is inevitable sooner or later, in practically all cases, and must bear directly upon the brain itself, for the bony capsule, after closure of the sutures, cannot expand. If the growth does not interfere with the drainage of the ventricular system, or if it infiltrates and destroys rather than replaces brain tissue, it may attain a large size before producing an increase in pressure, though a very small growth which blocks any of the narrow channels of the cerebrospinal fluid outflow may produce an increase in pressure quite early.

The theory generally accepted today is that the cerebrospinal fluid is produced largely within the lateral ventricles, whence it passes to the third ventricle through small openings known as the foramina of Monroe. Passage to the fourth ventricle is through the narrow aqueduct of Sylvius, and escape from the fourth ventricle is by way of small openings centrally and laterally situated. From this point the fluid fills the subarach-

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noid space and the large cisterns about the brain, from which it is removed through the venous circulation. It is obvious that if fluid should be impounded anywhere along the channels just described, there would result a consequent increase in the amount proximal to the block, and that a hydrocephalus would result. A block at the foramen of Monroe, for instance, would cause a dilatation of the corresponding lateral ventricle. A block at the aqueduct of Sylvius would cause a dilatation of both the lateral ventricles and the third ventricle. A block at the foramina about the fourth ventricle would cause a distention of the entire ventricular system. Blocks at any of these points produce the type of lesion frequently described as internal hydrocephalus which is at the opposite extreme from the so-called communicating type, a widespread lesion causing interference with the absorption of the fluid and tending to dilate not only the ventricles but the entire subarachnoid space, including the cisterns. If these facts are borne in mind, it is easy to visualize the lesions resulting in hydrocephalus as tumors of the ventricles or tumors about the aqueduct or inflammatory lesions about the foramina of the fourth ventricle.

The general effects of an increase in intracranial pressure include, first of all, the well known triad of headache, vomiting and choked discs, but many other symptoms are likely to occur also, alone or in combination, such as mental dulness or lassitude, vertigo, convulsions, visual disturbances, hallucinations, delirium and coma, though in a given case many or any of them may be absent. When the stage of increased pressure is reached the localizing signs lose some of their value, as they may be due to pressure and may not be associated directly with the lesion itself. Convulsions are an excellent example.

Headache is apt to occur in the course of every brain tumor and is often an early symptom, if not the first. It may be general or localized, though localized headache cannot be regarded as of focal value; occipital or subtentorial lesions, for instance, cause frontal headaches, and vice versa, or the headache may be on the side opposite the lesion. Headache caused by brain tumors may be constant and dull, with acute exacerbations, or remittent and extremely severe. It is apt to occur early in the morning and pass off in a few hours, and it is aggravated by any factor which tends to increase intracranial pressure, such as coughing, sneezing or straining at stool; this factor is probably responsible for much of the constipation associated with brain tumors, particularly in children harboring growths of the posterior fossa. In this type of tumor the headache is apt to be unremitting, and in pituitary tumors it is usually bitemporal. Headaches due to brain tumors are notably resistant to the usual curative measures. Brain tissue itself is insensitive to pain, and the headache associated with tumors is probably due to stretching of the dura. Localized percussion tenderness is rare, but may occur when a growth approaches the skull.

Vomiting is frequently associated with the headache and occurs more often in the early morning, when the headache is apt to be worse than at other times. Nausea does not usually accompany it, nor is it usually associated with the taking of food or drink. The spontaneous variety, which occurs without warning and from an empty stomach, is far more frequent than the projectile variety in which the vomitus emerges very forcibly and is projected in a stream to some distance, though textbook descriptions would seem to imply the contrary. When projectile vomiting does occur it is of great significance, for it is very suggestive of a cerebral lesion, though it is by no means pathognomic. Indeed, one would do well to reserve the diagnosis of cerebral vomiting until all other causes have been eliminated.

A complete examination of the eyes is imperative, the fundi and the visual fields being the vital points. It furnishes some information relative to seven of the twelve pairs of cranial nerves: the second, third, fourth and sixth, for obvious reasons; the

fifth, which mediates the sensation of the cornea; the seventh, which closes the eye; and the eighth, disease of the vestibular portion of which may cause nystagmus.

Choked discs are most important; they may be associated with other conditions, it is true, but in probably 90 per cent of all cases they are associated with brain tumors. The choking, furthermore, is preceded by earlier changes, such as venous engorgement and tortuosities, and slight blurring of the margins. The progress or recession of pressure can frequently be checked by observation of the changes in the fundi. Visual acuity must also be determined, for it must be borne in mind that a high choked disc is not incompatible with good central vision, even though it causes a concentric contraction of the visual fields and an enlargement of the blind spot. Examination of the eyes may also reveal nystagmus, ptosis, pupillary inequalities and reactions, together with exophthalmos, squints, muscle paresis and paralysis. Diplopia, which is common, is generally due to weakness of the external rectus muscle, which is innervated through the sixth pair of cranial nerves. These nerves run a long and exposed course along the base of the skull, and are subject to involvement at any point, which means that weakness of the external rectus muscle, although it may help to lateralize the lesion, has little localizing value. A bilateral weakness indicates a lesion in the pons. The visual fields must be carefully considered, for while concentric contraction and enlargement of the blind spot are merely concomitant of choked discs, any notching of the field, whether homonomous, bitemporal, or, in rare cases, binasal is significant from a localizing standpoint, especially if it be symmetrical.

Vertigo or giddiness, dizziness, and swimming in the head are common. The symptom may be slight and transitory, occurring only on sudden changes of position, or so profound as to produce a severe degree of ataxia, making walking or standing impossible. Vertigo is frequently accompanied by nausea and vomiting. It is an outstanding symptom in lesions of the posterior fossa, in which case it is often accompanied by other signs as incoordination and other cerebellar phenomena. It must be emphasized that vertigo is associated with many other diseases and must not be regarded as at all pathognomonic of a brain lesion.

Convulsions, which would naturally be expected in tumors of the motor cortex, are surprisingly common in brain tumors in other locations, particularly the temporal lobe. Unless the attacks are localized, that is, confined to some particular part or parts of the body, they cannot be deemed focal signs. Many brain tumors are initiated by convulsions, and it seems wise to emphasize that in all such attacks occurring for the first time in middle or later life brain tumors must be excluded. The tonic or cerebellar fit, which is characterized by a general attitude of tonic extension, much like decerebrate rigidity, and which is seen mostly in children, is associated with lesions of the posterior fossa.

Hallucinations may be auditory, visual or olfactory and are to be expected in lesions associated with these special centers. When they accompany lesions in other regions they may be the result of a general increase in pressure, and they are apt to occur with the severest types of headache. The olfactory hallucination or uncinate fit is characterized by a sudden, almost flash-like sensation of smell or taste or both, usually of a vile nature, which disappears in a few seconds and is succeeded by a peculiar dreamy state of unreality. A persistent disagreeable smell is not an olfactory fit.

Mental changes are of all degrees and kinds, and may be either maniac or depressive in nature. On the depressive side there may be mere dulness or listlessness, or complete coma, while on the maniac side the change may vary from a moderate degree of euphoria to a wild state requiring mechanical restraint. Errors of judgment and antisocial behavior are very common manifestations.

Turning to the three great fields of gen-

eral somatic musculature, sensation, and reflexes, it may be said briefly that the changes in the musculature include twitching and jerking movements, weakness, awkwardness, loss of speed, and even paralysis. It must be kept in mind that movements of individual muscles are more apt to be through cells in the anterior horns of the spinal cord, whereas cortical discharges tend to affect groups of muscles, producing purposeful movements. Sensory responses may be aggravated, reduced, or absent. The same holds true of normal reflexes, and various abnormal ones may also appear.

While the diagnosis of brain tumors still rests largely on the time-honored methods of history and physical examination, certain mechanical aids are available and should be employed as indicated. Chief among them is the roentgen ray. This type of examination may demonstrate the result of increased pressure, as shown by a thinning of the inner table of the skull directly over the convolutions, or by erosion of the dorsum sellae and the clinoid processes, which are the most usual findings. The bone over the tumor may be eroded or thinned, or may be markedly thickened. Large clusters of blood vessels occur about some types of tumor, and in many instances there is sufficient calcification within the growth to cast a distinct shadow. The internal auditory meatus may be enlarged by a growth, or a calcified pineal gland may be shown shifted from its normal position. In tumors in or about the sella characteristic bone changes are usually found, but one must not diagnose a sellar lesion merely on the basis of erosion of the dorsum and of the posterior clinoid processes, for this change can take place with increased pressure from any cause, because this region is the weakest area in the base of the skull.

Roentgenologic study by means of contrast media is another method of diagnosis. By one such method a portion of the cerebrospinal fluid is removed and replaced by air, which will cast a shadow. The air, which is lighter than the fluid, will seek the highest level, and by various movements of the head it can be made to outline the cavities and show any displacement or distortion. The exchange may be made directly into the ventricles, through trephine openings, or by means of lumbar puncture, both methods having their advantages. The introduction of air directly into the ventricles generally results in a better definition of their outline, but it requires an operative procedure to achieve it, and it carries a definite risk. Air introduced by means of lumbar puncture may not give so good a picture, but the procedure is not an operative one, and although it may cause the patient discomfort, it is associated with far less risk. This method is strictly contraindicated in lesions of the posterior fossa.

Other contrast media, in addition to air, have been used to visualize the cranial cavities. Such media can be injected directly into the carotid arteries, the pictures being made at once, before the opaque substance is swept out of the cerebral circulation. The interpretation of roentgenograms made by this method requires much experience and caution.

Spinal puncture as a diagnostic method in brain tumors is a questionable procedure. It is doubtful whether, in most cases, the information obtained warrants the risk. In tumors of the posterior fossa spinal puncture may release sufficient pressure below to allow a pressure cone to prolapse through the foramen magnum, and to bring about sudden death, and even in tumors above the tentorium such a pressure change may cause a jamming down of the tumor into the incisura tentorii and produce a grave crisis. Puncture of the cisterna magna has all the risk of spinal puncture, plus the possibility, in cases in which the cistern may have been entirely eliminated by pressure, that the needle, once it has penetrated the dura, may pass directly into the medulla. It would seem reasonable to say that if a case cannot be diagnosed without spinal puncture, the information so obtained would not make the diagnosis certain.

Metastatic tumors of the brain, which are

relatively common, may be derived from tumors of any part of the body, the thoracic region and the kidney being particularly frequent primary sites.

In conclusion, it may be said briefly that the treatment of brain tumors is in general surgical. Some few may be treated with more or less success by roentgen ray or radium, but they are the exception, and their selection is very difficult. The time has long since passed when we were content merely to make a diagnosis of brain tumor and decide on the localization of the growth with a reasonable degree of certainty. Now we endeavor further, to formulate some conception of the type of growth to be dealt with, on the basis of its history and location, and the age of the patient, for upon such matters the questions of treatment and prognosis largely depend. The work of Cushing and Bailey is an excellent illustration of this modern method. Cushing was so impressed by the differences in behavior of the group of tumors classified as glioma that he and his pupils, notably Bailey, studied their cytology intensively, correlating the laboratory with the clinical findings in such a way that we have now available an excellent working basis for their classification even though it may not prove a final one. In the more malignant types the survival period is a matter of months, it is a matter of years in the less malignant types. If that question could be decided in all brain tumors, without surgical intervention or prior to surgical intervention, probably many of them would be treated by deep radiation, either alone, or in combination with simple decompression, rather than by extensive surgery, and the results might be much better.

SUMMARY

This discussion has purposely been confined to the more common signs and symptoms associated with brain tumors. The idea has been to emphasize the clinical picture which should lead to a suspicion of the presence of a brain lesion, without regard to its localization. The whole subject may seem to be very gloomy, but it must be kept in mind that in many cerebral growths, one is dealing with cancer, and that a malignant tumor of the brain differs from such a tumor elsewhere in the body only because of its location. Many such tumors are inoperable, but so are many malignant tumors of the stomach, the pancreas, the kidney and other organs. Many of them can be treated only by a palliative decompression operation, but many other tumors can also be treated only by such palliative procedures as gastroenterostomy, cystostomy and colostomy. The fundamental principles are the same everywhere, and in the brain, just as in other organs, the solution of the problem rests chiefly upon early diagnosis.

PYELITIS*

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Pyelitis in the strict sense of the term practically never occurs. Infection of the renal pelvis is almost invariably accompanied by inflammation of the renal parenchyma. The observations that are to follow will, therefore, embrace in a truer sense, the field of pyelonephritis.

At the risk of appearing at times trite, we shall attempt to emphasize the fundamental aspects of the problem, placing lesser emphasis on the theoretical side. Needless to say, pyelitis is one of the most frequent conditions which the practitioner encounters and he should be familiar with its symptoms, its diagnosis, and its treatment.

CLASSIFICATION

Pyelitis may be considered to present itself in three main groups: (1) infancy; (2) adulthood; (3) pregnancy. In each of these, we must deal with acute and chronic forms. Furthermore, in all the groups it is important to differentiate between the obstructive and the non-obstructive types.

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ETIOLOGY

In the vast majority of cases, the colon bacillus is the offending organism. Less frequently, staphylococci, usually aureus or albus, and streptococci occur.

Rarely the condition is produced by typhoid bacilli, pneumococci, or gonococci. In our experience, other causative micro-organisms are so rare that they need not here be considered.

From the standpoint of prevention, as well as that of diagnosis and of therapy, it is important to remember that pyelitis is generally secondary to infection elsewhere. Frequently, the lower genito-urinary tract is the focus from which the kidney is infected. Particularly is this true in the female, as the vagina is in close proximity to the very short urethra. From a lower focus, the infection ascends to the kidney pelvis by way of the lymphatics, rather than as was formerly thought by extension, via the mucosa. A group of Harvard investigators, working with animals, have shown that organisms are not carried upward by reflux, because when bacteria and finely powdered charcoal were placed in the urinary bladder and the urethra ligated, no charcoal could be found with the infection, which had reached the renal pelvis. They showed further by serial sections of the ureters that there was an increased number of lymphocytes around the lymphatics. It is generally known, however, that in patients who have a dilatation of the ureter, allowing a reflux of urine, the infection may be carried directly upward.

Many authorities believe that the etiologic agents are carried to the kidney by the blood stream more frequently than by the ascending route. Obviously, in these cases a septicemia, usually low-grade, with primary foci in the teeth, tonsils, sinuses, or other areas of localized infection pre-exists. We have shown experimentally, working on dogs, that cocci attack chiefly the glomeruli, whereas bacilli find their site of predilection in the tubules. For this reason we may expect many small metastatic renal abscesses in the coccal infections, while fewer suppurative parenchymal lesions occur in the bacillary form.

Less frequently pyelitis is produced by direct extention of inflammatory processes from adjacent organs: viz., hepatic abscess, diverticulitis, appendicitis, or salpingitis. Occasionally, it may be found as a result of penetrating wounds or contamination by foreign bodies introduced through the lower urinary tract.

SYMPTOMS

The early symptoms and signs will vary with the mode of invasion. In those cases in which the pyelitis occurs as a result of upward extension, we may expect early evidence of infection below. Thus, there may be a history of frequency, burning on urination, and possibly urgency, tenesmus, or even terminal hematuria. On the other hand, the bladder infection may produce so slight an irritation that it will cause only a frequency prior to the onset of the pyelitis. Often the patient will recall no abnormality at all and attention will be directed to the kidney only after exhaustive search for the cause of the unexplained fever.

As the result of the absorption of toxins, the patient may present a history of general malaise. Proponents of the blood stream type of invasion quite rationally claim that the feeling of general debility is more frequent and marked in this type of the disease.

All of the acute cases have fever, generally remittent in character, the height and constancy of the elevation of temperature depending upon the extent of the parenchymal involvement rather than from that of the pelvis. However, we must remember that in purely pelvic involvement, the degree of pelvic or uretral obstruction will have a distinct influence in determining the extent and character of the temperature. In practically all of the cases there is a history of recurrent chills or chilly sensations. These are usually of a mild character, although at times they simulate definite rigors.

The patient, in many instances, will have noticed a cloudy discoloration of the urine. He may complain of lumbar backache, characteristically worse in the costo-vertebral angle.

In children, gastrointestinal symptoms, such as nausea and vomiting, and occasionally abdominal pain and diarrhea may predominate. Convulsions rarely occur, but when they do they are usually associated with very high fever.

In granular pyelitis intermittent hematuria is almost a constant finding. For this reason a

history of bloody urine, particularly if it occurs during pregnancy, should arouse suspicion of this condition.

Although there is usually a history of an acute attack in chronic pyelitis, there may be evidence of a low-grade cystitis and nothing more. In many instances, this is thought to occur following the kidney infection. As a rule, however, chronic infections are associated with some type of obstruction due to stones, tumors, strictures, or ptosis. Obviously, the symptoms in these cases vary with the degree of obstruction and the virulence of the organisms.

DIAGNOSIS

An examination of the freshly catheterized specimen of urine is of the greatest importance in the diagnosis of pyelitis but the mere presence of pus cells should not lead to a hasty conclusion. Infections of the lower urinary tract, notably chronic urethritis, prostatitis, foreign bodies in the bladder, and diverticula, may be responsible for the pyuria. On the other hand, the presence of any one of these conditions does not necessarily rule out pyelitis since it frequently occurs in association with them. As a general rule the lower urinary tract infections can be eliminated by routine methods of physical examination, but in the more obscure cases, especially if the pyelitis is of such low-grade character as to produce no local signs, cystoscopy should be employed.

Tenderness in the renal area may be a valuable sign in the diagnosis of pyelitis when it is present, but its absence is of no practical value due to the fact that it can be elicited only in those cases in which there is distention of the pelvis and the calices or in those in which there is marked parenchymal involvement.

In the pyelitis of pregnancy there is nearly always considerable distention of the kidney pelvis. For this reason, tenderness is fairly constant in these cases. On the contrary, in pyelitis of infancy we have found this sign to be rare because stasis is usually minimal.

Not infrequently the diagnosis depends upon the elimination of other conditions which may simulate renal infection. Acute inflammation of the appendix, of the salpinges, and occasionally of other viscera in contact with the ureter, frequently cause sufficient inflammatory reaction in that structure to produce pus cells. These cases have a proportionately higher ratio of erythrocytes in the urine. As a rule, the markedly different temperature curve together with the physical finding will make differentiation of the above conditions fairly easy.

Other extra-renal conditions which simulate pyelitis, including malaria and typhoid fever, infrequently or practically never produce pyuria. Here again, the characteristic physical findings such as the presence of an enlarged spleen and laboratory aids usually make differential diagnosis comparatively simple.

Cortical infections of the kidney, besides producing a pyuria, cause the excretion of casts, a more constant and higher temperature, and less fluctuation of the pulse than is usually found in pyelitis. Involvement of the perinephric area which, as a rule, results in marked tenderness and rigidity, ordinarily presents a less difficult problem in diagnosis.

Post-partal pyelonephritis, a condition which we believe occurs more frequently than is generally recognized, often presents no reliable physical signs, and may be overlooked even though the urine is examined, since trauma at the time of delivery often causes pyuria. Cases of persistent post-partal fever which cannot be definitely attributed to other puerperal infections should, therefore, be subjected to cystoscopy if a correct diagnosis is to be made.

TREATMENT

Most of the acute cases of pyelitis in infancy and non-pregnant adults will respond readily to general constitutional care, including: rest in bed, bland diet, mild laxatives, and forced fluids. We have noted a slight advantage in the early administration of abundant quantities of alkalies, particularly in the treatment of children. As a routine procedure, if the infection does not respond to this treatment in from five to seven days, we discontinue the alkalies and administer to adults ammonium chloride and methenamine (urotropin), while in children, caprokol for a similar period. It is important in changing the acidity of the urine to give large doses since it has been conclusively proved, experimentally and clinically, that the hydrogen-ion concentration must be below 5.5 to produce the best results. Generally, we give

a dosage of about 120 grains of ammonium chloride a day. We have observed little or no benfit from the administration of ammonium chloride or any other acidifying agents in cases in which there is any considerable impairment of renal functon, obviously for the reason that it is not excreted in sufficient quantities to lower effectively the hydrogen-ion concentration. The presence of renal stones also appears to militate against the successful acidulation of the urine. It will be noticed that we employ ammonium chloride rather than sodium acid phosphate, as we have found the latter to be far less efficient. The administration of concentrated hydrochloric acid, 15 drops, (approximately 1 c. c.) in 8 ounces of water followed by 8 ounces of water three times a day, seems to be of definite value in adult cases.

In an effort to obtain a marked change in the hydrogen-ion concentration, some men have even gone so far as to advocate the restriction of fluids, with the view of producing higher acidity by decreasing the urinary output. If it becomes necessary to choose between the two, we have found it definitely advantageous in the great majority of cases to administer copious amounts of liquids with a view of lavaging the renal pelves.

Advocates of the administration of the various dyes, such as pyridium, serenium, mallophene, acriflavine, mercurochrome, and gentian violet, have reported good results, but in our hands they have been of questionable value except for the psychic effect.

Striking results in the treatment of pyelitis by the ketogenic diet have been recently reported. To be effective this procedure requires strict supervision and the proper selection of cases by preliminary culture to determine the type of organisms responsible for the infection. When used, it is customary to administer daily one gram of protein per kilo of body weight, at first with a moderate amount of carbohydrates and a slight excess of fats, later with a gradual decrease in the carbohydrates and a corresponding increase in the fats until the lower fatty acids in the blood are inadequately oxidized and ketone bodies are excreted in the urine. Helmholtz, of the Mayo Clinic, has observed that the urine should contain more than five hundredths per cent concentration of beta-oxybutyric acid and a hydrogen-ion concentration of less than 5.5.

Occasionally, in cases of pyelitis associated with atonic conditions of the pelvis and the ureter, the administration of surgical pituitrin in doses of 3 to 15 minims every four to eighteen hours appears to have been of value. This drug is of further use in determinging the presence of obstruction since it will cause an increase of pain in the distended renal pelvis. Caution should be observed in its administration in cases of myocarditis, arteriosclerosis, hypertension, and pregnancy.

In cases of pyelitis not responding to conservative treatment, the physician must resort to cystoscopy. In pyelitis of infancy and in the non-pregnant adult, failure to respond to the therapeutic measures outlined above within a reasonable time, which we arbitrarily set at from two to four weeks, is usually evidence of an obstructive lesion or an anomaly. In these conditions it is necessary to remove the contributory cause before the infection will disappear. It is generally advisable in the acute stage to restrict cystoscopic manipulation to the passage of ureteral catheters and lavage of the kidney pelvis. Later, when the acute symptoms have subsided, pyelography may be employed as a diagnostic aid if the cause of the stasis has not been determined.

Since in the pyelitis of pregnancy there is nearly always present considerable urinary stasis, we are convinced that a much shorter interval should elapse before the patient is cystoscoped. In acute pyelitis in which there is marked stasis, it is preferable to resort to the indwelling ureteral catheter which should be allowed to drain the pelvis continuously from 24 to 48 hours.

After the hyper-acute stage has passed pelvic lavage with a solution of nitrate of silver, ¼ to ½ per cent, will usually cause the infection to subside rapidly if the contributory cause has been removed. The dilatation of strictures, the removal of stones, and the correction of anomalies must be done to help eradicate the infective process. General foci of infection such as teeth, tonsils, sinuses, and prostate gland should not be neglected.

CONCLUSIONS

1. Pyelitis and pyelonephritis are of suffi-

ciently common occurrence to merit the consideration of all medical men, whether they be general practitioners or specialists.

2. The presence of renal infection should be suspected in every case of unexplained fever, vague abdominal pain, lassitude, and other more or less remote symptoms, as well as in cases which have urinary frequency, pyuria, or other symptoms or signs more directly referable to the urinary tract.

3. The differential diagnosis between pyelonephritis and other causes of abdominal pain is often difficult. For this reason all possibilities should be thoroughly investigated. The removal of appendices thought to be chronically diseased, in cases in which pyelitis is actually the cause of the symptoms, is probably one of the most frequent errors in surgery. We believe that it is preferable to subject a patient to cystoscopy, if there is only a suggestion of possible urological lesions rather than to submit him or her to an abdominal operation when the kidney is actually at fault.

4. The administration of copious amounts of fluids is the most valuable factor in the treatment of acute uncomplicated renal infections.

5. A change of the reaction of the urine is of value.

6. Lack of response to conservative treatment within a reasonable period of time is usually an indication of pathology which can be discovered and may be treated by cystoscopic manipulation. In order that the best results be obtained the urologist should see the case before irreparable damage has been done.

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UTERO-SALPINGOGRAPHY AND UTERO-TUBAL INSUFFLATION IN STERILITY*

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As Bethel Solomons[21] has said, "sterility is a disease; a disease which can bring misery into the home. The craving for a child may become worse than many diseases." Primitive woman, hoping to realize the desire for children, resorted to the witch doctor, whom she thought could cure her barrenness with his mystical power. Charms and other superstitious measures kept her hopes rekindled until old age supervened. Many modern women resort to all sorts of foolish expedients in the hope of lifting the ban of sterility.

Our knowledge of the causes and treatment of sterility has been all too meagre until recent years brought marked advancement in endocrinology and in the study of the patency of the fallopian tubes. Now the work of Rubin[15] on insufflation, and of Cary[18] in utero-tubal salpingography, has paved the way for a more thorough study and treatment of the sterile woman. Obviously, the determination of the tubal patency is only a part of the investigation of sterility. Interest in the chemical and serological aspects of human reproduction have been steadily increasing. We will consider in this paper only the diagnostic and therapeutic value of utero-salpingography and utero-tubal insufflation.

UTERO-TUBAL INSUFFLATION

Insufflation is an office procedure. Patients

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usually return home to their regular routine after the insufflation. The most favorable time for insufflation is after the post menstrual phase, from the fourth to seventh day after cessation of menses. This precludes interference with a possible pregnancy.

The cardinal indication for insufflation is to determine the patency of the fallopian tubes. Rubin lists the following indications for insufflation:

1. In deciding upon the advisability of an operation to relieve sterility.

2. As a postoperative measure to test and maintain the patency of the newly formed stoma (salpingostomy, salpingolysis, and tubal reimplantations into the uterus).

3. To check the results of a tubal sterilization operation.

4. To determine the secondary effect upon the tubes of induced abortions, uterine retrodisplacements and appendicitis.

5. To determine the condition of a residual tube after tubal pregnancy.

6. To study the physiology of the tubes, especially in such conditions as functional amenorrhea during the reproductive period, during the menopause and following roentgen ray castration.

7. To determine the tubal status before prescribing contraceptive measures in suitable cases.

8. As treatment for dysmenorrhea.

9. To produce a pneumo-peritoneum as an aid in the diagnosis of obscure abdominal lesions.

10. Its application has been extended by veterinarians to valuable breeding animals where sterility was traceable to abnormalities of tubal patency.

Acute or subacute inflammation of the genital tract, such as salpingitis, endocervicitis, colpitis, menstruation or abnormal bleeding from the genital tract and pregnancy, are all contraindications to insufflation.

In patent tubes, the initial rise of the mercury manometer is usually not over 100, with a drop between 20 and 70 millimeters of mercury. Where the tubes are closed or strictured, the mercury may rise to 200, where it will stay if the tube is completely closed. Many cases need four to six insufflations before the tubes finally open. It is remarkable how soon pregnancy frequently follows the first successful opening of the tubes. Quite often the amount of pressure required gradually decreases with each test. Referred pain to the shoulder when gas reaches the subdiaphragmatic area is diagnostic of patency of one or both tubes.

A good prognosis can be given patients with normal tubal patency and function, provided there are no other causes of sterility. Repeated insufflations in stenosed or adherent tubes may frequently open the tubes sufficiently for pregnancy to take place, but the prognosis must be very guarded. Insufflation in dysmenorrhea has frequently proved a good therapeutic measure. Utero-tubal insufflation should be done soon after operation for tubal pregnancy, to determine the patency of the residual tube and also to keep the tube patent,

Injection of uterus and tubes with lipiodol; note length of tubes; taken after second injection.

Uterine cavity shows no abnormality; tubes patent; speculum removed; tenaculum and cannula showing.

provided an attempt to open the residual tube was made at time of operation.

UTERO-SALPINGOGRAPHY

Utero-salpingography today has gained a merited place in the armametarium of the gynecologist. Rubin, in 1920, reported his studies on transuterine insufflation, which soon was combined with transuterine pneumo-peritoneum and roentgen ray to demonstrate the pelvic organs. In an effort to gain more knowledge of the patency of the fallopian tubes, many different kinds of radio-opaque substances were injected. Cary,[18] in 1914, first attempted to get roentgenograms of the pelvis, using collargol to inject the uterus and tubes. Heuser[24], of Buenos Aires, in 1921, used lipiodol first for hystero-salpingography. Lipiodol since that time has been widely used and publicised as an ideal iodized oil for injection into the uterine cavity and tubes.

Many claims have been made for utero-salpingography, varying from a very conservative to an extremely radical. Sturgis[11], outlining the policy of the sterility clinic at the Hospital of the Woman's Medical College of Pennsylvania, delineates well the conservative estimate of the use of hystero-salpingography as follows:

1. All cases with patency of the fallopian tubes when the Rubin test, the palpatory findings or other diagnostic methods employed in investigation have failed to furnish satisfactory explanation of the cause of sterility.

2. All cases of tubal occlusion as demonstrated by a previous Rubin test, for determination of:

   a. Whether the occlusion of the tubes is unilateral or bilateral;
   b. Location of the occlusion.

A definite record is made of the length, size, and position of the tubes, with the amount of the opaque medium which "spills" into the peritoneum. The position and size of the uterus is definitely on record.

The optimal time for salpingography is from

Tubes well dilated but spill into pelvis evident; no deformities in uterine cavity.

the fourth to seventh day following the cessation of menses. It may be done in the office, provided the necessary roentgen ray equipment is available. The patient is requested to take a light cathartic the night before, an enema and douche before coming to the office. To the very nervous patients, we give some of the barbiturates. The equipment we use is simple, being a cannula, a mercury manometer, vaginal speculum, tenaculum and lipiodol warmed to body tempertaure. The cervix and cervical canal is swabbed with merthiolate, the tenaculum applied to the anterior or posterior lip of the cervix. The flexible cannula is then inserted into the cervical canal until the rubber shoulder fits the external os. The lipiodol is then injected slowly, until 4 to 8 c.c. are injected or the patient complains of some pain in the tubes. A roentgenogram is taken at this time. The vaginal speculum is then removed, and the vagina swabbed out to remove any leakage of lipiodol and a second picture taken.

Last injection of lipiodol; note speculum, tenaculum and cannula removed; note spill into vagina, with some lipiodol in uterus and spill into peritoneum.

Films may again be taken at six and twenty-four hours.

Due to the reports in the literature of accidents following the use of lipiodol, such as the entrance of lipiodol into ovarian and uterine veins, or peritoneal irritation, we have been using neo-iopax for several months. Very satisfactory films are obtained and the medium will do no harm if it enters the circulatory system. Hyams[2] recommends interrupted fractional injection of lipiodol. The advantages claimed are the absence of cramp-like pains and the lessened danger of entrance into the uterine veins, as the oil is never under pressure. Five separate injections of 2 c.c. each are made, with roentgen ray exposure after each injection. Errors in technic are controlled by developing the films after each exposure. The patient is requested to return in twenty-four hours for the final exposure.

DISCUSSION

More detailed study of human sterility in the past fifteen or twenty years has revealed many causative factors which had been underestimated and a reinterpretation of the functional, chemical, and serological aspects of human reproduction has been necessary. Utero-tubal insufflation and salpingography have played a very important part in the revision. The importance of determining the patency of fallopian tubes in any study of a sterile mating has been well established. The therapeutic value of insufflation and the injection of iodized oils have been attested to by many writers. A review of the literature reveals many case reports worthy of mention. Rubin reports the collection of 764 pregnancies from the literature and personal communications, all attributed directly to insufflation. Witmer, Cushman and Leucutia, in 1930, reported 25 cases of pregnancy following utero-salpingography in sterility studies of occuled tubes, Robbins and Shapira[21], in 1931, reported 32 pregnancies following injection of 133 cases, in which one or both tubes were found to be or caused to be patent by injection of lipiodol. The therapeutic effect of any method for the relief of sterility is best judged by the number of pregnancies following within a reasonable period thereafter especially in those cass of five or more years of sterility.

SUMMARY AND CONCLUSIONS

1. Utero-tubal insufflation is an office procedure and may be done repeatedly without fear of serious sequelae.

2. Contraindications to insufflation or salpingography are menstruation or pre-menstrual phase, genital inflammations, pregnancies, abnormal bleeding from genital tract and severe constitution diseases.

3. The most favorable time for either procedure is the post-menstrual period, from the fourth to seventh day following cessation of menses.

4. The therapeutic value of both procedures in sterility has been demonstrated, many pregnancies have followed their use.

5. Insufflation in dysmenorrhea has proved of value.

6. Utero-salpingography has been found to be of especial value where it is desired to determine whether one or both tubes are occluded and to locate the occlusion. It is used frequently where insufflation has failed to furnish the exact explanation of the sterility.

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NEWER METHODS IN DIAGNOSING EARLY CARCINOMA OF THE CERVIX*

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NEW ORLEANS

The treatment of carcinoma of the cervix has become standardized in the various clinics, but the mortality from this disease has not been reduced. During the last few decades there has been no new development in the application of surgery to increase further its effectiveness or value in the control of cancer. Nor has there been any new technic evolved to render the use of radium or the roentgen ray a more perfect means of treatment and cure. Until we know more about the etiology of cancer these are the only weapons we have to depend upon in waging the fight. The miraculous "cancer cures" hawked at intervals to an ever-hopeful profession and a willingly gullible, lay public have only proved to be flares in the dark. In our efforts to reduce the mortality from malignancy of the uterus we have become convinced that at present our only hope lies in diagnosis of the condition in its very earliest stages.

Approximately 15,000 women die each year in the United States from carcinoma of the uterus. In 1932, in the State of Louisiana, there were 1500 deaths from all malignant tumors of which 296, or approximately one-fifth, were from carcinoma of the uterus. These were the reported cases. It is beyond dispute there were many unreported cases. By early diagnosis, it is estimated the mortality from carcinoma of the cervix can be prevented in 95 per cent of the cases. This would mean that each year there is a useless sacrifice of approximately 300 lives in the State of Louisiana alone. The mortality rate for carcinoma of the cervix in the country at large is 90 per

*Read before the Orleans Parish Medical Society, November 25, 1935.

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cent. This can only be reduced by early diagnosis. Diagnosis made when the patient reports for treatment even at the very onset of symptoms is by no means early diagnosis. The text-book symptoms of leukorrheal discharge, bleeding, and pain are only present after the disease has become established and is past the early stage, and at that time diagnosis is possible by palpation and visualization. These symptoms were labelled by my former chief, Dr. C. Jeff Miller, as symptoms not of carcinoma of the cervix, but as symptoms of death. Norris points out that cervical carcinoma usually becomes inoperable in from three to five months after development of the initial symtoms, and its progress is more rapid in some instances. Carcinoma of the cervix in the beginning is symptomless, and if diagnosis can be made during this period, before the ulcerative, invasive stage, there would be some possibility of effecting a cure in 95 per cent of the cases.

The primary difficulty obviously lies in being able to secure the opportunity to detect carcinoma of the cervix when it is in this early stage before onset of symptoms. This is possible at times when the patient applies to the gynecologist for other conditions. Every woman around the menopausal years has, if not an active fear of carcinoma of the uterus, at least an apprehensive dread of it, which keeps some away from the doctor's office even after the inception of suspicious symptoms in the belief that "Where ignorance is bliss, 'tis folly to be wise." On the other hand, it draws a few into the doctor's office for a routine yearly examination and the assurance that no malignancy exists. Periodic pelvic examinations offer an effective means of diagnosing early carcinoma of the cervix and thereby reducing the mortality.

In recent years, two aids have been devised for the diagnosis of early carcinoma of the cervix, i. e., before it reaches the ulcerative stage: the Schiller iodine test and the colposcope.

In the Schiller test, iodine in the form of Gram's solution is applied over the portio vaginalis. The normal squamous epithelial cells contain glycogen which absorbs the iodine, and these areas stain a deep mahogany brown. In the areas of beginning malignant change, the cells have become atypical, with atypical nuclei, have lost their glycogen, and therefore do not accept the stain but appear as pinkish or faintly stained regions. However, this non-staining quality is also distinctive of other conditions, and it must be emphasized that the Schiller test is only an aid to facilitate diagnosis of early carcinoma and that it is not a proof of the presence of carcinoma. It acts as a sign-post to point out the suspicious areas from which sections are removed with a sharp curet, or scrapings secured for histologic investigation. Carcinoma which has reached the invasive stage will take the iodine stain, but at this phase it has passed the early stage and can readily be diagnosed without the use of the Schiller test. Areas of erosion will confuse the picture and where eversion is present, the columnar epithelium does not absorb the iodine. Nabothian cysts take the stain to a lesser extent than normal tissue.

Care must be exercised in manipulating the cervix for this test not to traumatize the epithelium by too vigorous sponging with gauze or accidental scraping with the speculum or curet for as Graves points out, the pathologic cells which will not take the stain lie only two or three layers deep, and it is very easy to inadvertently remove them, resulting in the area taking the iodine stain and thus obscuring the picture.

If the cervix is clinically diseased, yet is negative to the Schiller test, presenting none of the white or faintly stained areas diagnostic of beginning malignancy, it must not be concluded, therefore, that the cervix is normal. On the contrary, if the suspicion of disease is strong enough to lead us to make the test, the condition certainly warrants some form of treatment to prevent the development of malignancy in the future. The chief value of the Schiller test as a diagnostic aid in the detection of early carcinoma of the cervix lies in the fact that it enables us to apply treatment earlier than we have been able to in the past. It makes us cancer conscious and places in our hands a simple test which can be carried out routinely in all pelvic examinations without

extra equipment and at practically no cost. The general practitioner can use the test and by so doing he, too, will become more cancer conscious.

The colposcope was devised by Hinselmann of Hamburg and later modified by Preissecker and others, and constitutes one of the greatest advances in the last few years in the diagnosis of pre-malignant or early malignant lesions of the cervix. This instrument is nothing more than a microscope or telescope, which allows us to view and study the various cell changes taking place without actually removing tissue. Its use causes the patient no more inconvenience than would an ordinary vaginal examination with a speculum. With the colposcope, it is possible to detect a carcinomatous area measuring 4 to 5 millimeters, and even smaller areas using a greater degree of magnification, in fact, so minute a region that it could not be seen with the naked eye, and which it would be an utter impossibility to palpate. An important prerequisite for its use, however, is an accurate knowledge of the appearance of the physiologic structure of the cervical mucous membrane in order that the correct interpretation may be placed upon pathologic changes. We must hold in our mind's eye a picture of the normal cervix as it would look through the colposcope, a picture which would reveal no lacerations, no erosion around the external os, and no areas of leukoplakiae. Skill in differentiating the normal from the abnormal cervix comes with experience in colposcopic studies, just as it does in reading the deviations from the normal in pathology and roentgen ray.

The most common place for the development of malignancy is at the edge of an erosion where there has been an attempt at healing. Naturally, we would expect to find more cell changes at that point than in the normal portion of the cervix which is covered with squamous epithelium. Through the colposcope, it is possible to discern the least change suggestive of carcinoma, leukoplakiae, as well as minute ulcers, no larger than one quare millimeter. In the so-called leukoplakia can be observed the early malignant changes taking place, i. e., excessive growth of surface epithelium and hornification of cells. As a result of the hornification of the atypical epithelium, these leukoplakiae appear as pearly white patches. Malignant leukoplakiae have the same appearance through the colposcope as the so-called benign leukoplakiae, therefore, biopsy material from these areas is necessary in order to make an exact diagnosis.

The colposcope has a distinct advantage over the Schiller test because with it erosions of the cervix can be studied which is not possible with the Schiller test. It furnishes a surer method of obtaining biopsy material. For instance, two areas may look identical to the unaided eye, but through the colposcope it is possible to differentiate that one of these areas is normal and the other presents a section of proliferation of the epithelial elements, that the cells are becoming atypical when compared with the surrounding epithelium.

The treatment of carcinoma of the cervix, as we have already stated, has practically become standardized in all clinics. Radium is always preferred to hysterectomy where the disease is well developed. I believe that in certain cases where it can be determined that the carcinoma is located in the cervix only, without metastasis, or in cases where we are able to make the diagnosis with the two tests I have spoken of, that hysterectomy is indicated. In the following table I have reviewed the cases of carcinoma we have had in our service during the past five years. During the past two years, our incidence of hysterectomy has increased remarkably. This is due to the fact that in the past few years we have discovered many cases of very early malignancy of the cervix before symptoms appeared, and which, therefore, were ideally suited for hysterectomy.

	Total Number Of Cases	Radium	Hysterectomy
1931	22	18	4
1932	30	27	3
1933	35	29	6
1934	44	25	19
1935*	27	16	11

*First ten months.

In our opinion, it is essential that every woman within the limits of the "cancer age" should undergo a colposcopy, or a Schiller test, or a

combination of both, at least once a year, preferably oftener, if we are to diagnose carcinoma of the cervix in its incipiency. Only by the preventive measure of early diagnosis will we be able to reduce the mortality.

CONCLUSIONS

To reduce the mortality of carcinoma of the cervix early diagnosis must be made.

Routine use of the Schiller test and the study of the diseased cervix with the colposcope enables us to make a diagnosis before symptoms have begun.

All women should be urged to have a yearly examination especially if there is a history of difficult delivery or pelvic infections.

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REPORT OF THE PASTEUR INSTITUTE OF THE CHARITY HOSPITAL OF NEW ORLEANS FOR THE YEAR 1935

RIGNEY D'AUNOY, M. D.*
and
JOHN H. CONNELL, M. D.*
NEW ORLEANS

During the year 1935, the Pasteur Institute of the Charity Hospital administered antirabic prophylactic treatment with material prepared as generally indicated by Semple**. Each injection consisted of a 2 mil portion of 4 per cent killed virus-emulsion, except in the case of children under three years of age, to whom a 1 mil portion of vaccine was injected at each treatment.

INJURIES BY PROVEN RABID ANIMALS

Head Injuries: Injections were made twice daily for the first seven days, and once daily thereafter for fourteen days.

Injuries to Trunk and Extremities: If multiple and severe, the same treatment was used as for head injuries.

If slight and treatment was begun within six days after injury, treatments were continued for fifteen days, with one injection daily.

If slight, and treatment was begun more than six days after injury, treatments were continued for eighteen days, with one injection daily.

INJURIES BY UNLOCATED ANIMALS

If the injury was received under suspicious circumstances, the same type of treatment was used for a similar type of injury by proven rabid animals. If there were no suspicious circumstances, treatment was given over a period of fourteen days, with one injection daily.

NO ACTUAL INJURY

If rabid or suspected animals had been handled, treatment was given over a period of eighteen days, with one injection daily.

TREATED CASES

Two hundred and sixty-nine cases were treated during 1935. They are classified as follows, according to the suggestion of the International Rabies Conference of the League of Nations, in order that the statistics of various institutions may be compared.

A. Cases in which the animal proved to be rabid (by microscopic and biologic test).

B. Cases in which the animal was diagnosed clinically as rabid.

C. Cases in which the animal was only suspected to be rabid (strayed, destroyed, or in such a condition when received that the brain was unfit for examination).

D. Cases in which the animal was alive and

*From the Departments of Pathology and Bacteriology of the Lousiana State University Medical Center and the Charity Hospital, New Orleans.

**For the method of production of virus, see Reports of the Pasteur Institute for 1931-32. New Orleans Med. and Surg. Jour., 86:236-238, 1932.

well after an observation period of three weeks, or whose brain was found to be negative when examined after the observation period.

E. Cases in which the patients received treatment without actually having been bitten (patients who handled rabid or suspected animals).

Table I records the number of treated cases in each category and classifies the types of injury.

TABLE I

Location of Injury	Category 1935 A	B	C	D	E	Total
Head	6	0	13	1	0	20
Body	2	1	2	1	0	6
Superior Extremities	39	0	48	3	29	119
Inferior Extremities	41	0	55	2	5	103
Multiple sites	0	0	21	0	0	21
Total	88	1	139	7	34	269

Table II gives the age, sex and race of the patients and Table III the Parishes whence these patients came.

TABLE II

Age	White Male	White Female	Colored Male	Colored Female	Total
Under 1 year	0	0	0	0	0
1- 2 years	2	5	0	0	7
3- 4 "	14	9	2	0	25
5- 9 "	23	16	6	4	49
10-19 "	41	3	6	4	54
20-29 "	15	12	2	3	32
30-39 "	15	19	2	3	39
40-49 "	21	10	4	3	38
50-59 "	6	6	2	3	17
60-69 "	4	3	0	0	7
70-79 "	1	0	0	0	1
80 and over	0	0	0	0	0
Total	142	83	24	20	269

TABLE III

Parishes

Acadia	2
Avoyelles	18
Jefferson	39
Jefferson Davis	1
La Fourche	2
Livingston	3
Orleans	148
Rapides	8
St. Helena	1
St. James	1
St. Landry	8
St. Tammany	5
Tangipahoa	25
Vermillion	2
West Baton Rouge	2
West Carroll	4
Total	269

Table IV gives the number of days elapsing between the time of injury or exposure and the beginning of treatment, when such information could be obtained.

TABLE IV

Days	Patients
Same	11
1	99
2	27
3	27
4	35
5	21
6	12
7	8
8	11
9	2
10	6
12	1
13	1
14	4
20	2
60	1
Unknown	1
Total	269

Table V indicates the circumstances of the injury and the type of first aid treatment given in each case.

TABLE V

Injury inflicted through clothing	70
Injury inflicted to bare skin	199
Iodine applied to site of injury	1
No local treatment	110
Phenol, cauterization and serum	32
Tetanus antitoxin only	127

Table VI indicates the number of dog brains examined and their diagnoses.

TABLE VI

Negative	132
Positive	57
Unsatisfactory	13
Total	202

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NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

One of the most successful forms of instructing the man who has been in practice for some years and who has not been able to keep up with all of the present day trends in medicine in its broadest implications, has been the establishment here, there and throughout the country of so-called post-graduate assemblies. These have been of inestimable value to the busy practitioner of medicine who, on account of the exigencies of time and the fulness of his day, does not have the opportunity to keep abreast of advances in medicine. Not only have the clinics and assemblies been well worth while to such men but as well to the specialist who may be more reasonably expected to keep up in his specialty, but other phases of medicine are so many that it is a physical impossibility for him to know what is being done in other lines. As a matter of fact only to the most omnivorous reader would it be possible to devour everything worth while in medical literature. These post-graduate assemblies are most catholic in their appeal to practically all members of the medical profession irrespective of their type of practice.

One of the advantages of the assemblies in a given community, is that they afford an opportunity to the physicians within a radius of 150 miles or more to attend them without serious loss of time in travel, in other words the speakers at the meeting come to their auditors rather than the listeners going long distances to hear these men. It is a most sensible arrangement.

Realizing and appreciating that New Orleans, Louisiana, southern Mississippi and Alabama and other nearby communities have not had the opportunity presented to them of attending post-graduate assemblies except those that are a considerable distance away, a public spirited committee has been organized that has already taken steps to put into effect a post-graduate week that will be held in New Orleans some time in early March, 1937. This committee has already made reasonably definite plans and has definitely organized for the future meeting. This meeting has been underwritten by a group of physicians in the city. The present plan is to have a list of distinguished clinicians from out of town, from the various important medical centers, come to New Orleans to deliver addresses and to give clinics. This latter feature is particularly to be accentuated. The store of clinical material in Charity Hospital affords an excellent opportunity for demonstration of a series of cases in which the clinician may be particularly well informed and especially interested. Since such an opportunity does not exist in practically any of the cities where these post-graduate assemblies are held, it should be a very valuable feature of the as-

sembly. The invited guests will also contribute papers and there will be, in all probability, round table discussions at which time questions will be asked and answered. Altogether the prospects for this new venture by the Orleans Parish Medical Society seem most propitious and happy. Further notice of course will be sent to physicians in the relatively near neighborhood of New Orleans. These statements above are merely expressed in very general terms. The detailed announcement will follow but in the meantime, those who are interested should tuck away in a corner of their mind the fact that this graduate medical assembly will be held in March and will not conflict with other medical meetings. If present plans are completed a really splendid educational treat will be afforded to the doctors of this state and neighboring states.

THE DOCTOR IN COURT

The first article in this issue of the journal is the address delivered by Mr. St. Clair Adams at the annual meeting of the State Medical Society in Lake Charles. This presentation could well be read most attentively by every subscriber to the journal who is a medical man because always there is a chance that the doctor may be called as a witness and very frequently he will have to qualify as an expert.

Mr. Adams has formulated, as he says, out of his own experience largely, a set of rules which might well be considered the last word in what the expert witness who is a medical man should do and how he should conduct himself. The author of these rules is well qualified to speak; he is a lawyer who has had a most active legal life and has had a tremendous experience in the court room. He is more particularly fitted because for some years he has been the counsel of the Louisiana State Medical Society.

Sometimes the fact is unknown to the physician that when he is called to court as a witness he need not express any opinion except as to the facts of the case in which he has been called to testify. If questions are asked which require an opinion, particularly an opinion of a hypothetical case, the physician is not obligated to answer such questions unless the lawyer is willing to have him appear as an expert. If he is simply a witness as to fact the fee is that of any witness, whereas an expert is entitled to considerably greater monetary returns. Any physician may be called as an expert; it does not necessarily imply that because a man is not a specialist that he may not be called on to deliver his expert opinion. He should be on his guard not only to see that he is recognized as an expert but also that he has in his mind Mr. Adams' rules for expert medical witnesses. If he has these at his finger tips, he will be in a position to make a most favorable impression on judge and jury and be of material assistance to justice.

PREVENTION OF HYPERTENSION

Every practicing physician is well aware of the difficulties of controlling hypertension, regardless of its type or cause. It is quite generally assumed that in most patients whose hypertension begins at a comparatively young age and for which there is no obvious or determinable cause, that the factor of heredity plays a most important part. One of the very definite helps that a practicing physician, who comes into contact for a considerable period of years with members of the family groups which are under his care, could contribute to the general knowledge of medicine, would be the reporting of the systematic following of blood pressure in childhood, youth and early midlife, particularly in those families in whom the parents or grandparents or close collaterals have died as result of heart, kidney or cerebral disease. A considerable series of cases culled from the records of the family practitioner would add much to that information which we now lack regarding the development of so-called essential hypertension. Are the early stages of malignant hypertension antidated by a period at which time basal pressure may be normal but under the stimulus of such factors as excitement, fear, anger, wide jumps in the systolic and to a lesser extent the diastolic pressure may take place? This has been referred to by S. Marx White as the labile phase of hypertension. It is familiar to all physicians; every one knows how under the first examination

when the blood pressure is taken before the patient is quieted down it may be 35-40 mm. of mercury higher than it will be after the doctor has gained the confidence of the patient.

Hypertension of the extremely labile type is the blood pressure that can be helped. When a patient develops more or less fixed high pressure about all that can be done for him or her is to hope and pray. Drugs are of little avail; rest may temporarily allay the ultimate cerebral apoplexy or cardiac failure, but in the early stages of hypertension much may be done to prolong the patient's life. It might not be too much to expect that if this patient is going to develop malignant hypertension his symptoms may be alleviated for a time, if he has any and the course of the disease may be modified. One cannot tell definitely because we do not know what is going to happen in these people.

Assuming that the patient is in the early labile phase of hypertension several measures may be advocated to avoid the high jumps in pressure which undoubtedly have their effect on the blood vessels. Change in environment of the patient, if possible, so that the stimuli producing the jumps may be reduced to a minimum; attempt to shorten periods of high pressure and to increase the periods of low. These *desidirata* may be obtained best by frank explanation to the patient of why they should be done. Explain to him in words of one syllable what may be the outcome if he permits his surroundings and environment to disturb him; indicate that hours of work should be modified, that there should be a greater amount of rest, more time should be devoted to recreation; a quiet period of complete relaxation after meals is desirable. Sleep should be long and restful. If any drugs are of value in reducing blood pressure then the sedatives lead all others by far.

It is the family physician who has the opportunity of answering many of the problems of hypertension. It is the family physician who should demand of his patients a regular and thorough physical examination every year, perhaps not to find immediate disease but at least to be a record and a time signal in the event of developments of future trouble.

HOSPITAL STAFF TRANSACTIONS AND CLINICAL MEETINGS

SHREVEPORT MEDICAL SOCIETY

The regular meeting of the Shreveport Medical Society was called to order on June 2, 1936, by the president with 33 members and 2 guests present. The minutes of the previous meeting were read and adopted. The minutes of the recent Executive Committee meeting were read and accepted by the Society.

Committee Reports: The Committees on the applications of Drs. D. B. Daniel and N. J. Bender reported favorably upon their applications for membership in the Shreveport Medical Society.

Dr. Lucas, Chairman of the Social Affairs Committee, stated that tentative plans called for some type of social gathering the first Tuesday in August.

Scientific Program: Dr. Paul W. Winder presented an interesting and instructive talk on "Common Lesions of the Cervix," discussing laceration, erosion, eversion and carcinoma of the cervix. He pointed out that the dangers of cervical disease are threefold: first, as a source of focal infection; second, it is productive of local symptoms, including dystocia and sterility, and third, as a source of cancer. Dr. Winder's paper was discussed by Drs. Alverson, Edwards, Blandino and Sanders.

A film on "Egotocin" was then shown.

Unfinished Business: The regular order of business was suspended and Drs. Bender and Daniel were elected to membership by open ballot and the oaths administered by the president.

Dr. Webb made a motion that the Maternal and Infant Mortality Committee be authorized to establish a prenatal and postnatal clinic for indigent mothers under the control of the Society. This motion was duly seconded and carried.

New Business: Resolution of regret on the death of Dr. Furman was adopted by the Society.

Dr. Tooke pointed out that there were several bills of interest to the Medical Society pending before the State Legislature and Dr. Alverson made a motion that the Public Health and Legislation Committee be instructed to arrange for a representative of the Society to investigate these bills and to cooperate with the State Society in the interest of organized medicine. If necessary, this representative should go to Baton Rouge at the expense of the Society. This motion was duly seconded and carried.

Paul D. Abramson, M. D., Sec.

THE SHREVEPORT EYE, EAR, NOSE AND THROAT SOCIETY

The Shreveport Eye, Ear, Nose and Throat Society met in regular session at the Charity Hospital, the evening of Monday, May 4, 1936, at 7:30 o'clock. The President, Dr. L. W. Gorton presided. The following members were present: Drs. Gorton, Crebbin, LaRue, I. Henry Smith, and Wilkinson, of Shreveport.

In the absence of Dr. Boaz, a patient of his was presented by Dr. Wilkinson. He gave a history of failing vision in the right eye, beginning about 18 months ago, and at the present time perceives only light and large objects. Examination of the fundus revealed haziness of the disc on the nasal side, while the temporal portion was clear and distinctly outlined. The arteries were small and pale throughout the fundus, while the veins were black, slightly dilated and irregular in outline. There were no hemorrhagic or atrophic areas. All present agreed that this was a very unusual case and the concensus of opinion was that most likely there had been a very mild optic neuritis accompanied by circulatory disturbance. As the patient was negative for luetic or focal infections, the idea was advanced by Dr. LaRue that the only hope for improvement was a sphenoidectomy. The above treatment was advised in spite of the fact that the x-ray report was negative for sphenoid involvement.

Dr. Gorton reported a case of a colored man who had swallowed a fish bone and on whom he had done an esophagoscopy. He did not find the bone, but noticed during the operation a laceration of the esophageal wall. The patient apparently was in good condition and left the hospital the following day. Shortly thereafter, he had a severe hemorrhage and died before medical aid could be had. Dr. Gorton showed a specimen taken at postmortem in which there was a perforation of the esophagus, leading into an abscess, which in turn had eroded into the aorta, causing a direct communication between the arch of the aorta and esophagus. He was positive that no injury had been done at the time of operation and the position of perforation was such as to make it practically impossible for it to have been instrumental in origin. This case was of unusual interest, though no definite explanation of the perforation was advanced.

J. A. Wilkinson, M. D., Sec.

THE SHREVEPORT EYE, EAR, NOSE AND THROAT SOCIETY

The Shreveport Eye, Ear, Nose and Throat Society met in regular session at the Charity Hospital, the evening of Monday, June 1, 1936, at 7:30 o'clock. The president, Dr. L. W. Gorton presided. The following members were present: Dr. A. H. Mann of Texarkana, Ark.; Capt. Corliss of Barksdale Field; and Drs. Boaz, LaRue, Crebbin, Gorton, and Wilkinson, of Shreveport

Dr. Boaz presented three interesting eye cases:

1. A subluxation of the lens following an attempt at cataract extraction last October. Due to the fact that the patient is totally blind in the other eye, he has been permitted to retain this practically useless eye. It is in a quiescent state at present and the patient has good light perception.

2. Dr. Boaz's second case was an ulcer of the cornea, due to malaria. It has responded nicely to treatment of the local lesion along with antimalarial therapy.

3. The third case Dr. Boaz presented was total blindness of the right eye following an injury. There was slight opacity of the lens and detachment of the retina. Since the patient has been blind, he has developed an external strabismus.

Dr. Gorton showed an x-ray picture taken of a child's chest in which there was a six-penny nail lodged in the trachea. He also exhibited the nail which he had removed, the child making an uneventful recovery.

The meeting was adjourned until the first Monday in October.

J. A. Wilkinson, M. D., Sec.

TRI-STATE HOSPITAL STAFF

After dinner in the Hospital dining room, the Staff was called to order on May 28, 1936, by Dr. C. R. Gowen, acting Chairman. The routine busibusiness was disposed of in the usual manner.

The Scientific Program consisted of the presentation and discussion of the following case by Dr. W. S. Kerlin. A white male, aged 36 years, was admitted March 4, 1936, four days after the onset of lobar pneumonia. He was very toxic and delirious at the time of admission. Blood culture, after 16 hours' incubation, showed luxuriant growth of Type I pneumococcus. He appeared desperately ill the following day, his sixth day of illness. Twenty thousand units of Type I Feltens antipneumococcic serum was administered by vein on the sixth day of illness. He had no reaction and the same amount was repeated at four hour intervals until 80,000 units were given. The next morning his temperature was normal, and the patient felt considerably better. Negative blood culture thirty-six hours after serum injection, negative control culture two days later. He developed empyema of the left chest and this was drained by thoracotomy ten days later. Temperature subsided and the patient was permitted to leave the Hospial five weeks after admission. His heart was well compensated at the time of discharge; no audible murmurs, and sounds were clear, rhythm regular. The patient returned every few days for dressing and was making fairly satisfactory progress. However, four weeks after discharge from

the Hospital he had a recurrence of fever, followed by chill. Examination of the chest was negative. Skiagraph of chest revealed good illumination of both lung fields; heart apparently normal. The fever continued and the patient was readmitted to the Hospital a few days later. Examination of the heart revealed loud systolic and diastolic murmurs heard over both base and apex of the heart, no apparent hypertrophy. Blood pressure was 110/20. A loud pistol-shot sound was heard over the femoral, brachial and radial vessels. Blood culture revealed luxuriant growth of Type I pneumococcus, no demonstrable embolic phenomena. Acute pneumococcic endocarditis was evident and a fatal termination was anticipated within a few weeks' time. However, the patient expired very suddenly two days after readmission, probably from a cerebral embolus.

Following a discussion of the statistical and mortality reports for the preceding month, the meeting adjourned.

D. B. Daniel, M. D., Sec.

NORTH LOUISIANA SANITARIUM STAFF MEETING

The North Louisiana Sanitarium Staff meeting was called to order on May 26, 1936, by the President with 18 regular members present. After the disposal of routine business attention was turned to the scientific program.

Dr. Herold gave a short discussion on influenza, calling attention to the similarity of the disease in the present epidemic to that of the 1918 epidemic. Dr. Herold advised the use of convalescent serum because of its value in the treatment of "flu" and pneumonia. Dr. Webb then presented a paper on influenza in children, calling attention to the difficulty in diagnosis. He also stated that over 50 per cent of the children who have upper respiratory infection will have some degree of middle ear infection and cervical adenitis. The papers were discussed by Dr. Rigby, who called attention to the cyclical occurrence of "flu" and suggested that the speed of spread is proportionate to the speed of travel.

Harry M. Trifon, M. D., Sec.

SCHUMPERT STANITARIUM

After an excellent dinner in the hospital dining room, the Staff meeting was called to order on May 12, 1936, by Dr. C. H. Webb, presiding in the absence of Dr. Garrett.

Roll call showed 17 members and 3 visitors present. The visitors were introduced to the staff.

Scientific Program: Dr. J. B. Birdwell introduced Dr. T. J. Bush, who discussed "Diverticula of the Colon". He pointed out the particular prevalence of diverticula in the sigmoid area, and discussed the danger of carcinoma as a sequel to diverticula.

The discussion was opened by Dr. Boyce who compared the symptoms and treatment of this condition with appendicitis. Further discussion was continued by Dr. George Garrett.

Discussion of deaths ensued, with presentation of the case histories of two adults with fatal pneumonia, and of two accident cases.

Dr. George Garrett reported that Dr. B. C. Garrett is steadily improving in health.

C. H. Webb, M. D., Sec.-Treas.

MERCY HOSPITAL

The regular monthly meeting of the Mercy Hospital Staff was called to order on Wednesday, June 3, 1936, with Dr. Geo. Hauser presiding.

This was one of the most interesting meetings of the year, having as its scientific program a Symposium on Appendicitis. It was made especially interesting by the excellent presentations of various members of the staff. Dr. Phil de Verges discussed the pediatric aspect; Dr. M. M. Green, genito-urinary aspect, Dr. Zander, appendicitis in pregnancy; Dr. Lloyd Hanckes, the surgical aspect; and Dr. George Hauser, the pathologic aspect.

Lloyd Hanckes, M. D., Sec.

HOTEL DIEU

The regular monthly meeting of the Staff of Hotel Dieu was held on Monday, May 18, 1936 at 8:00 p. m. in the Nurses' Lecture Room of Hotel Dieu.

The meeting was called to order by the President, Dr. E. H. Walet, and with the Secretary, Dr. J. A. LaNasa, at the desk.

The Scientific Program consisted of:

a. Gynecological Phase of Tuberculosis, Dr. L. LeDoux. Discussed by Drs. Salatich and Dimitry.
b. Carcinoma of the Prostate (Case Report), Dr. Max M. Green. Discussed by Drs. Kahle and Chalaron.
c. Fractures of the Forearm with Motion Picture Demonstration, Dr. H. Theodore Simon.

A recess of one minute was ordered by the Chairman, after which the meeting resolved into Executive Session.

J. T. NIX CLINIC
New Orleans

At a meeting held in June, Doctor J. A. Gaudet read the following paper:

THE FORMED ELEMENTS OF THE BLOOD

Apparent—even to the quid nunc scrutiny of the inquisitive as with the shuttered eye of the uninitiated, he views the stained blood smear through the immersion lens of the microscope—is the fact that the formed elements of the blood are typically two: grossly globular and homogeneous non-nucleated red corpuscles (erythrocytes), and large and differentially staining nucleated

white corpuscles (leukocytes)—in the average proportion of 800 to 1 (1600-410 to 1).

The erythrocytes, correctly concave or concavo-convex discs of a 6.7-81 microns in diameter, having an outer skin or stroma of lipiods around a framework of lipoids and hemoglobin, are commonly stated to total 4,500,000 cells per cu. mm. in women and an even 5,000,000 in men. The latest compilations furnish broader normals,[2] a minimum of 4,100,000 and a maximum of 6,400,000; thus presenting a health variance of over 2,000,000 cells per cu. mm. A variation of 500,000 cells in eight hours has been noted in the same individual—factors such as the time of the day when taken, humidity, temperature, altitude, sex, age, and vasomotor status, are understood to be determinants of this variance.

Table A contains the results of a survey of 1000 erythrocyte totals from our records; in each case the hemoglobin was not less than 70 per cent (Tallquist):

Erythrocytes—Table A

Sex	Number of Cases	Number of Cells	Average	Maximum	Minimum	Variance
Male	340	1,748,880,000	5,143,764	6,890,000	4,100,000	2,700,000
Fmle	660	3,303,970,000	5,006,001	6,430,000	4,000,000	2,430,000
	1,000	5,052,850,000	5,052,850			

Polycythemias (increased red cell counts)[4] are usually relative and due to the concentration of the cellular elements following fluid loss, but counts of 12,000,000 have been seen in disease (the absolute polycythemia of Osler-Vaquez disease). Oligocythemias (decreased red cell counts) approximate hemoglobin percentages. The lowest count recorded is that of 100,000 (Osler's moribund case of pernicious anemia.)

The erythrocytes arise, intravascularly, from the intersinusoidal endothelial cells of the bone marrow capillaries,—in health, before the fifteenth year of age, from the marrow of all bones and afterwards from the flat, spongy thoracic bones and femoral and humeral heads. In pathologic conditions, when the demands for them are unusual, the sites of erythropoiesis extend distally to include the bone marrow of the extremities.

At the locus of formation of erythrocytes, those of the school of monphyletists[5] pronounce the versatile myeloblast the first link of the adult pronormoblast-normoblast chain, terminating in the circulatory red cell. Others, the polyphyletists, the dualists and those of modified opinions, postulate mechanisms of erythropoiesis alike in their consideration of the embryonic mesenchymal cell as the parent cell of all blood cells but contentious over the question of the existence in postnatal life of a polyvalent cell endowed with all development possibilities. Nearing the end of the normoblast stage, the nucleus of the pre-erythrocyte becomes pyknotic and finally, in whole or in parts, is expelled (extrusion), so that when the mature erythrocytes are routed to their new circulatory habitat, as they now are, they are end products devoid of nuclei and the powers of locomotion and reproduction. They are, in actuality, dying cells doomed to a "willy-nilly" existence as oxygen bearers to the tissues, of a thirty day to several months period, when they pass from the circulation, being engulfed by the reticulo-endothelial cells of the bone marrow, lymph nodes, liver and the spleen. Their hemoglobin is liberated to form bile (bilirubin).

After several years of toilsome persistence with stained blood fields the microscopist, now no longer an amateur, can recollect and refashion the marvels of erythrocyte anomalousness he has seen. Unimaginable aberrations of their size and shape—oval and pessary forms, anisocytosis and poikilocytosis; colorful oddities of their tinctorial characteristics—polychromatophilia, granular degenerations, hypochromia and reticulocytosis; multi-derangements of normal allocations—erythroblasts and reticulocytes; all pass before him in vivid array and he correlates them with diseased states.

In our vicinity it is customary to consider the average total white cell range as being within 5-8,000 cells per cu. mm. Generally, limits are broader and between 4,000 and 10,000 cells per cu. mm. is accepted; thus there is a health variance of 6,000 cells. In 1925 Sabin and her co-workers[6] concluded: "There is a characteristic rhythm of the total white cells with an interval of approximately an hour's duration; the total number of cells varies in the proportion of 1 to 2", and now it is thought that the individual has a range of circulating leukocytes, "the maximum of which never exceeds twice the minimum".[7]

Table B contains the results of a survey of 1,000 leukocyte totals from our records:

Leukocytes—Table B

Sex	Number of Cases	Number of Cells	Average	Maximum	Minimum	Variance
Male	377	2,789,150	7,420	10,600	4,500	5,500
Female	623	4,033,100	6,473	10,000	4,250	5,750
	1,000	6,822,150	6,822			

The majority of these counts were taken between the hours of 2 to 4 p. m., the period of occurrence of the highest leukocyte normals, so that ours approach the peak average.

Environmental and physiological conditions influence the count. After muscular activity is elevated, and in late pregnancy and the early puerperium counts of 15-20,000 have been noted. During

the first week of life 15-25,000 cells have been counted; gradually the adult range is attained around the fifth year of life.

Shortly after the tyro microscopist notes the dissimilarity between erythrocytes and leukocytes, he discerns the feature that, though the red globules are grossly alike, distinguishing lineaments are exhibited by the nucleated white cells. Some present a complexity of cytoplasmic granulation (granulocytes) and a multiformity of nuclear morphology; others exhibit a homogeneous cytoplasm (non-granulocytes) and a large and simple nucleus. In normal adult blood the proportion of granular or non-granular cells is 3.5-2 to 1, and that of the child it is near to 1 to 1-1.5. From the second week of life to the fifth year the non-granulocytes dominate (40-70 per cent) the blood smear, but in infancy the granulocytes predominate (70-80 per cent) until the second week of life.

The granular leukocytes align to a classification based on the characteristic of their intercellular granules into neutrophiles, eosinophiles, and basophiles and, as to their morphology, into myelocytes—normally confined to their formative sites; metamyelocytes—older myelocytes having a normal circulatory incidence of 0 to 1-2 per cent; band or staff cells— more mature metamyelocytes, normally occurring in the circulation in percentages of 5-7 per cent; and segmented cells—mature polymorphonuclear (PMN) and polynuclear cells of 61-75 per cent occurrence in the circulation. These cells form the basis of the "Schilling count" and kindred "shift to the left" phenomenon which are expressions of the virulent demands of an invader on the granulocyte forming areas. Typically, the non-granular leukocytes are the lymphocytes which may be divided into large and small subtypes; however this is ordinarily superfluous. Not positively classifiable into either class are the monocytes or large hyaline leukocytes which usually represent 1-8 per cent of the "haemogram".

Unlike the fairly static and constant erythrocytes, the leukocytes are reactive in degrees, almost "ad infinitum", fluctuating with the type and violence of infection, the tissue involved, the structural arrangement of the infected part and the host reaction. The hyperleukocytic response is nature's first line of defense; since, primarily, the induced cells rush to the scenes of invasion, wall off and offer temporary resistence until a more potent second defense (immunity) can form and develop, when they subsist even before the victory is complete. Continued hyperleukocytosis indicates progress of the invasion, and infrequently the affront is apparently so drastic as to overwhelm the formative tissues (agranulocytosis) to non-response.

Any one of the leukocytes may be marshalled in an increase of the white cells but the neutrophilic granulocyte (the neutrophile) is usually the sympathetic cell. Cocci infections are largely provocative,—the pneumococci producing probably the highest PMN response, the bacillary infections of themselves are impotent as a rule. Chronic infections and diseases of the lymphatics call forth lymphocytes and diseases of the reticulo-endothelium recruit monocytes. Non-infectious diseases also evoke a hyperleukocytosis.

The granular cells arise from the extravascular bone marrow areas, besides large, mainly marginal capillaries, whence their reference as myeloid cells. These leukopoietic areas are distinct from the erythropoietic areas, although the products of either are derivatives of a common cell, the embryonic mesenchymal cell, which is the progenitor of all blood cells destined in extra-embryonic life to differentiate according to their environment and produce cells of their type. Whether a daughter cell with multipotent endowments exists in the adult is a mooted question; however, the concensus agrees that the slightly granular myeloblast is the primary cell of the myeloid series and that the tinctorially and morphologically variable myelocyte follows. Prior to migration to the circulation (penetration of the capillary walls) with ameboid motion of their own, they develop into lobed polymorphonuclears. Lymphocytes issue forth from foci of lymphoblasts in lymph glands and other tissues scattered throughout the body. The monophyletics hold the lymphoblast and the myeloblast to be the same cell, but the polyphyletics do not adhere to this doctrine[8] contending that the two cells are distinct and that each has a fixed myeloid or lymphoid potentiality.[9] When we consider their particular arrangement and analysis, their separate embryological histories and their individual responses to pathological and physiological stimuli, we cannot but join the polyphyletics in their appraisal of the lymphoblast as an entity. Azurophilic granules can sometimes be detected in a sparse distribution in their cytoplasm; however, this is not to be thought of as a true granulation but simply as a deposition, such as occurs around a nodal point, or as a residual of a protoplasmic secretion which has resulted from a previous toxic state.

Intermediate in granulation and larger and fewer than the polymorphonuclear leukocytes are the large hyaline leukocytes or monocytes with faintly basophilic cytoplasm variously speckled with azure granules and having a large, round, nucleolated nucleus. The origin of these mononucleated mystery cells is vague in a sense. Of course, like all blood cells, they ultimately trace to the embryonic mesenchymal cell, but in adult life it is uncertain whether they spring directly from the reticulo-endothelium or require the interposition of the myeloblast or lymphoblast. They are Metchinikoff's macrophages.

The leukocytes are end products; reproduction

never occurs in the circulation but maturation and growth proceed there. There is no information available as to the length of life of the white cells or what their unmolested end is. The neutrophiles are actively motile; they engulf and digest bacteria and foreign bodies and probably function as disseminators of tissue nutrition. Some monocytes are active phagocytes and others mere quiescent masses, and they increase when bacteria and insoluble particles are injected into the body. The lymphocytes "ooze" slowly through the tistues with an amoeboid movement, but when "supravitally" stained, they are motionless; they have never been acclaimed as phagocytes, and they have no recognized usefulness other than a probable aid to intestinal absorption, the production of antibodies and the fixation of toxine.

A third formed element, the blood platelets or thrombocytes are not so evident as the two first. They are sticky, fragile bodies, having no nucleus and being about one-fifth to one-half the diameter of an erythrocyte in size. Using a direct technic, they enumerate 200,000 to 400,000 per cu. mm. of blood; with a more refined method, they range from 300,000 to 800,000 and during menstruation exceed 1,000,000. They have a very definite association with blood clotting, and, according to the well known doctrine of Wright, they arise from the megakaryocyte of the bone marrow.

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OSCAR ALLEN TUMOR CLINIC
CHARITY HOSPITAL
NEW ORLEANS

The Scientific Meeting of June was called by Dr. James T. Nix, Director. The essayist was Dr. John Connell who presented the following paper.

CARCINOMA OF THE PENIS

Cancer of the penis takes a formidable position in onconology. It is the site of from two to three per cent[1] of all cancers observed in the male race. McCarthy[2] ranks it fourth in the frequency of skin carcinomas. Only the lip, nose and ear are given precedent. The incidence along with other malignant lesions appears definitely on the increase.

That the foregoing should be true in the future will rest almost entirely upon the medical profession's ability to assimilate already ascertained facts. Of all the malignancies of the body those of the penis are the most readily prevented and detectable. Phimosis and syphilis are the only two etiological factors of any significance.

Cancer of the penis in races where ritualistic circumcision is performed in infancy is unknown. There is only one exception to this, the case reported by Wolbarst[3], in one of the Semitic race, but he however had not been so treated. This case illustrated what is not a racial immunity but probably a surgical one. That an elongated foreskin associated with poor hygiene should be a direct etiologic agent in not surprising when we consider the true factors concerned.

In the urine we find indol, skatol, indigo, lipolytic and proteolytic ferments. This along with the fatty material secreted by Tyson's gland constitutes the smega which may be ever present under a tight prepuce. These elements become significant when we realize that experimentally indol, skatol and indigo are used in the production of skin cancer. Further, that the ferments acting on the fats present cause rancidity which must irritate and stimulate epithelial growth.

Syphilis as a direct cause is of minor significance because not more than five per cent have this disease as a background. There are however many cases as Moulson's[4] which are rather definitely proved to have arisen directly from the primary lesion, the latter never having healed.

In the Charity Hospital of New Orleans in the past three years there have been twenty-one carcinomas of the penis. The accompanying chart shows average ages, color and number according to their histologic variations:

Grade	No.	Age	Colored	White
I	9	59	6	3
II	7	56	4	3
III	5	39	5	----
IV	0	----	----	----
Totals	21	53	15	6

These figures though deplorably small give us interesting material for consideration.

The race incidence we have already mentioned in so far as Jews and Mohammedans are relatively free of the disease. According to published statistics the Chinese appear to be the most affected. In the United States many reports including Dean's (93 per pent)[5] would lead one to suppose that this lesion was predominant in the white race. In this institution where the proportion of colored and whites is about equal we see a great preponderance, 71 per cent in the colored race where both hygiene and syphilitic infection probably play a major role in an uncircumcised individual.

Th age period usually given is between 50 and

70 years although cases as young as 18 years have been reported.6 The cases in this hospital have grouped themselves in the main toward the sixtieth year. One case however, was 31 and another 32, both of which appeared in a group which appears very significant.

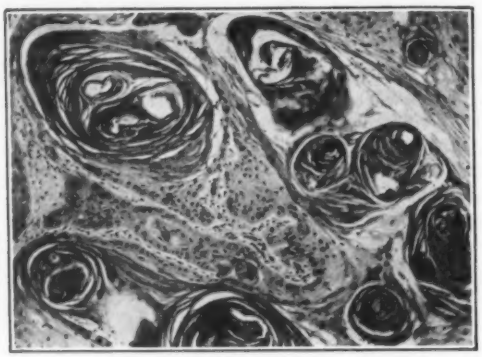

FIG. I.—Eosin-hematoxylin. Grade I squamous cell carcinoma showing large pearls indicative of a low grade malignancy.

From the pathologic standpoint we have several varieties: grossly, they are usually divided into two groups; the papillary and the flat. The papillary tumors which are usually the ones appearing in the older individuals may have an indurated base in their later stages, but the flat types are characterized by induration at all times. In the present series 62 per cent were of the papillary variety. The flat variety begins as superficial ulcerations and those with a luetic background are always of this variety. They show a superficial spread and a deep infiltration, the extent of which is dependent upon the duration of the disease. The papillary tumors appear first as a wart and grow by a coalition with other warts or by proliferative action.

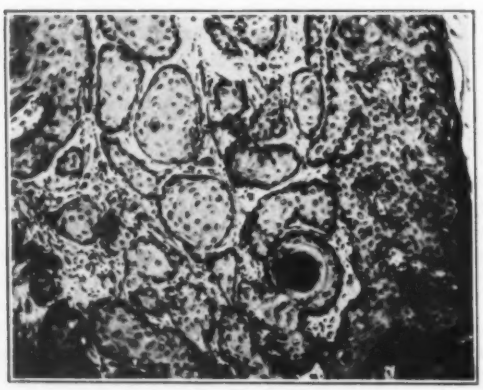

FIG. II.—Eosin-hematoxylin. Grade II squamous cell carcinoma. Only a few scattered pearls which are small. The epithelial cells show their advanced malignancy by dedifferentiation.

Histologically, all the tumors were of the squamous cell variety and (after Broder) are arbitrarily divided into four grades. Agreeing with other larger statistics most of the cases in the present group were of the lower grades of malignancy; namely, Grades I and II. The very interesting finding however, was the definite evidence that the advanced grades of malignancy were associated with youth. The age for the group III tumors was twenty years below that for the grade I variety. There were none of the highly anaplastic type IV tumors. Examples of the grades alluded to are shown in the accompanying photographs.

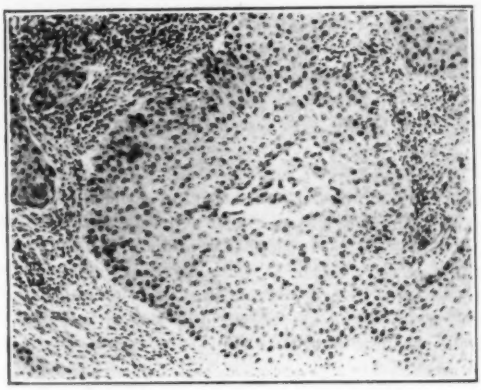

FIG. III.—Eosin-hematoxylin. Grade III squamous cell carcinoma. Complete absence of pearls, hyperchromatic nuclear elements plus numerous mitotic figures.

The prognostic value of the grading of these tumors and their therapeutic management is beyond the scope of the present thesis and will be the subject of a subsequent paper.

SUMMARY

Carcinoma of the penis is a common cancer of the skin that can be prevented by proper prophylactic means instituted by the physician, mainly circumcision and early recognition. Primary lesions of syphilis which do not heal as readily as expected should be investigated as to the possibility of malignant changes. Racial characteristics seem to play little part in the incidence aside from the associated religious ceremonies. The disease is primarily one of the aged but when occurring in younger individuals is prone to be a more active type of growth.

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HUTCHINSON MEMORIAL CLINIC

Symposium on Splenomegaly: Conducted by the Department of Medicine, Dr. W. H. Gillentine, Chairman.

Dr. Musser (Department of Medicine): I am presenting to you a classification of the chief causes of enlargement of the spleen:

I. Acute Bacterial Infections
   a. Typhoid fever.
   b. Undulant fever.
   c. Tularemia.
   d. Subacute bacterial endocarditis.
   e. Tuberculosis.
   f. Abscess.
   g. Septicemia.
   h. Other infectious diseases.

II. Acute Animal Parasitic Disorders
   a. Malaria
   b. Syphilis.
   c. Uncinariasis.
   d. Kala-azar (the leishmaniases).

III. Chronic Infections
   a. Tuberculosis.
   b. Malaria.
   c. Syphilis.
   d. Subacute bacterial endocarditis.
   e. Amyloid disease.

IV. Mechanical
   a. Portal obstruction.
      1. Chronic heart disease.
      2. Chronic lung disease.
      3. Cirrhosis of the liver.
   b. Polycythemia.
      1. Erythemia.
      2. Congenital heart disease.
   c. Torsion of splenic pedicle.
   d. Thrombosis of splenic vein.

V. Blood Diseases
   a. Associated with anemia.
      1. Pernicious anemia.
      2. Splenic (Banti's disease).
      3. Hypochromic anemia.
      4. Sickle cell anemia.
      5. Hodgkin's disease.
   b. Associated with leukocytosis.
      1. Chronic leukemia.
      2. Acute leukemia.
   c. Associated with increased fragility of red cells.
      1. Chronic hemolytic jaundice.
   d. Associated with platelet reduction.
      1. Thrombocytopenic purpura.

VI. Disorders of Reticulo-Endothelial System
   a. Gaucher's disease.
   b. Nieman-Pick's disease.
   c. Reticulo-endotheliosis.

VII. Deficiency Diseases
   a. Rickets.

VIII. Cysts
   a. Simple.
   b. Parasitic.
   c. Neoplastic.

IX. Neoplasia
   a. Sarcoma.
   b. Angioma.
   c. Secondary metastasis.

In some of these conditions the enlargement of the spleen is occasional only. Thus for example, in sickle cell anemia splenic enlargement is found only in the child, whereas the spleen shrinks to almost nothing in the adult. In tuberculosis it is rather exceptional to have the spleen enlarged unless this organ is involved in a generalized process, that is, tuberculosis of the spleen. Neoplasia of course refers to primary disease of the spleen and not to neoplasia elsewhere in the body.

The most important point to dwell upon is that there is a variety of conditions in which the spleen is enlarged, many of them readily diagnosed. In certain instances the occurrence of splenomegaly may be the link which ultimately completes the diagnosis.

Dr. Ané (Department of Radiology): With regard to the diagnosis of splenomegaly I think we are all familiar with the work that has been done with thoratrast. Until the time that we can find some form of opaque substance which will not be radio-active we have to depend more or less upon our soft tissue shadows for diagnosis of splenomegaly. In regard to radiation therapy practically all types of splenomegaly will become reduced. Our greatest effect, however, is in chronic myelogenous leukemia. The entire treatment may be directed to treatment over the splenic area, short bones and long bones. Care should be taken thoroughly to check blood counts. Recently, quite a bit of work has been done on the value of the basal metabolic rate as an indication for further irradiation therapy and recent work by Pohle, Meyer and Middleton has shown that the basal metabolic rate is not as valuable as blood counts and particularly the myelocyte count. It is necessary to individualize in practically every case. Some cases will show a marked reduction in count; others will have to be treated repeatedly. There is quite a difference in reaction in different individuals treated. The spleen may be treated in one case and a great deal of benefit obtained and in other cases there will be no reduction until the long bones and sometimes even the short bones are treated. You never know exactly just what type of reaction you will get until you have had an opportunity at irradiation therapy. The usual method is to use as small a dose as possible with frequent check-ups on the blood count, including the differential count. Radium was used in about

1922 for splenomegaly associated with malaria. European clinics reported remarkable results but these results were not duplicated in this country. At that time Dr. Menville and Dr. C. C. Bass used radium on cultures of malaria There was no destruction of parasites. Dr. Sante reported in quite a large series of cases demonstrating that in those cases in which you are unable to demonstrate the plasmodia, after irradiation therapy smears loaded with organisms may be found. Irradiation therapy has been used to obtain a positive smear. In regard to Hodgkin's disease the Hodgkin's and lymphosarcomas are grouped more or less as lymphoblatomas. Irradiation therapy has also been used in Gaucher's disease with questionable results. In Hodgkin's disease there is a marked reduction which is followed by enlargement of the spleen to its usual size, so you have to keep up irradiation for a considerable length of time.

Dr. Sodeman (Department of Medicine): A 35 year old negro was admitted March 21, 1936, with a chief complaint of weakness and backache, first noted one year ago. By October, 1935, weakness was so pronounced that it interfered with his work. Past history revealed a specific urethritis at 19, a penile lesion at 26. His wife had had three miscarriages. Physical examination showed him to be slightly under-nourished; mucous membranes were pale. There was an area of tenderness over the sternum at the level of the fourth costal cartilage. The liver could not be palpated. A mass extending 6 cm. to right of the umbilicus and half way from the umbilicus to the symphysis pubis was felt in the left upper quadrant. The examination was otherwise essentially negative. Laboratory examination showed a strongly positive Wassermann, hemoglobin 23 per cent and red blood cells, 2,245,000. The most remarkable finding was 440,000 white blood cells, of which about 40 per cent were young and abnormal cells. His basal metabolic rate was 50 per cent; blood sugar 88; n.p.n. 44-39; uric acid 3.7. From the clinical findings and from the blood findings a diagnosis of myelogenous leukemia was easily made.

There are two methods of treatment for myelogenous leukemia; one medical and the other radiologic. At one time benzol was quite commonly used. Arsenic was also used, and lately there has been an increased interest in its use, but irradiation is the best form of treatment, and we sent him to Drs. Ané and Menville. He started with a white count of 440,000 and was treated at least a month. At that time his count was 60,000. Today his white count was 13,750. He had, as I said, an anemia, which may be, in leukemia, one of four or five different types. It may be due to a toxic state; may be on a nutritional basis; may be an anemia of bleeding or the so-called myelophthisic type of anemia, due to crowding out of the red marrow. In the latter type nucleated red cells, polychromatophilia and other young forms appear in the peripheral blood. He had these findings at the first examination and we expect because of those findings that possibly this anemia would improve with treatment. His red count was 2,225,000; today it was 4,440,000. The history of a penile lesion itself was rather important. This is one of those diseases in which it is said you may get a positive Wassermann without the presence of the spirochete, but because of the wife's miscarriages, and the history of a penile lesion, besides the positive Wassermannn, I believe he has lues. However, since x-ray treatment, his Wassermann reaction has changed from strongly positive to slightly positive. Because of a great destruction of nuclear material these patients excrete much uric acid. This accounts for the high blood values. We tried to get a series of basal metabolic determinations on him but he very seldom showed up. He was given five appointments and only kept two. His basal metabolic rate is now about plus 1 per cent.

Differential diagnosis of myelogenous leukemia may be difficult. If the total white count is reduced it may be confused with agranulocytic angina. There is one condition, polycythemia, in which there may be an increase in all elements of the blood, red cells, white cells and platelets. Young white cells, myelocytes, may appear in the peripheral blood. If the white cells reach high levels, 30,000 or more, confusion with leukemia may occur. Then if, as happened in one of our cases, anemia develops, the diagnosis may be most confusing. The platelet count may be helpful in differentiation, for in polycythemia it may reach three million.

Dr. Gillentine (Department of Medicine): Miss A. K.: Two years before admission in October, 1934, the patient was told by her physician that she had an enlarged spleen. One year before admission a pterygium was removed from the right eye. The patient's mother died with cirrhosis of the liver with ascites and jaundice just before death. She has two brothers; one died shortly after birth and one is sickly and has an enlarged spleen. A sister is living and well.

There was a yellow, wedge-shaped pinguecula in the left eye with the base of the triangle toward the cornea. The spleen was enlarged three fingers below the left costal margin. The patient received roentgen ray and radium over the spleen in Hotel Dieu in February, 1935. The spleen was enlarged 13 cm. below the left costal margin and the liver 5 cm. below the right. An electrocardiogram showed some myocardial diseases. No cause was found for these changes. Blood studies were negative. The patient's brother came into the Clinic on January 18, 1935. He gave a history of occasionally bleeding from the gums and excessive bleeding from hemorrhoids which were not par-

ticularly marked. When he was examined, pigmented areas of the hands, neck and face were found. He had pingueculae in both eyes. Palpable anterior cervical glands were found; the spleen was palpable 6 cm. below the umbilicus and was firm. Roentgen rays of the femora showed changes which are characteristic of Gaucher's disease. Blood studies revealed a marked leukopenia (750 white cells). The red count was 4,500,000 red blood cells per cu. mm. The platelet count was about 150,000. The bleeding time was 11 minutes; coagulation time 3 minutes. Reticulocyte count was 1.5 per cent. We made a diagnosis of Gaucher's disease in both of these individuals on the basis of the familial disease, the occurrence of the wedge-shaped pingueculae in the eyes, the spotted pigmentation of the skin in one of them, the enlargement of the spleen, thrombocytopenia, leukopenia, and the absence of jaundice and ascites, and on the basis of the coarse, granular, worm-eaten appearance of the cortex of the femora without destruction of the cartilage and without destruction of the periosteum, in one of the patients. The diagnosis may be confirmed by splenic puncture showing the typical Gaucher's cells containing kerasin suspended in the cytoplasm by a fine reticular network that gives the cell a foam-like structure, hence the name foam cells.

Dr. Clement Jones (Department of Medicine): This patient is 63 year of age. Her mother is said to have had attacks of jaundice for which there never was any explanation. The patient's complaint started at 13 and consisted of attacks during which she would have severe pain over the splenic area and general weakness. She remembers the physician stating that she had some "spleen trouble". At irregular intervals the splenic pain would return and at times the jaundice. There must have been two or three attacks between 13 and 19. During a period of six years she had but one attack of jaundice. From the time she was 25 up until a year before she came in here in 1932, she had three attacks of weakness, jaundice and dyspnea. Her history immediately on admission to the Clinic was the same typical attack with additional symptoms of polyuria, dysuria and pruritus. The physical examination on admission showed a women 63 years of age, 5 feet 5 inches tall, weight 125 pounds; temperature and pulse normal; respiration 22. There was obvious jaundice, generalized arteriosclerosis, cardiac enlargement confirmed by x-ray, systolic murmur and a tremendous spleen. The size on palpation could be estimated at 13x7 inches. She has had edema of the ankles and shifting abdominal dulness indicative of ascites. Laboratory findings showed a high blood sugar and sugar in the urine. Her total red cells were 3,000,000; white, 4,500; differential count was normal. The first fragility test showed 0.48 to 0.38. That was in July, August and September of 1933. There are several diagnoses to be considered in her case. First, she is a definite case of diabetes mellitus; she is a rather advanced case of arteriosclerosis, chronic tonsillitis, and, we believe from that and subsequent findings, that she has chronic familial hemolytic jaundice. Her red count has ranged from 2,500,000 to 3,500,000. The reticulocyte count on frequent occasions has been from 4 to 15 per cent. The fragility test in the first instance was 0.48-0.38; about five repeated estimations showed the range to be probably between 0.50-0.40. Several of those were accurately controlled. She was sent to the Department of Surgery in consultation and splenectomy was recommended. She returned to Medicine and apparently that idea was approved, but there were some other factors in it that were not recorded but the fact remains that she was never operated upon. In addition, she is a borderline mental defective; a rather shaky operative risk. The suggestion that she go to the Department of Surgery scared her badly and I rather imagine that she would have serious mental complications preoperatively. The fact remains that she is probably slightly better off now than three years ago. I believe with the exception of age, that she is probably as well off now as 50 years ago. If we had had this woman at the onset of her illness 50 years ago, operation would have been the thing to do.

Dr. Burch (Department of Medicine): This case with a splenomegaly presents himself as a diagnostic problem. The patient is a white married male, aged 36 years. His illness began in 1932 with an insidious onset of fever, fatigue, malaise and chilly sensations. The symptoms increased in severity, later becoming associated with joint pains, profuse sweating (no characteristic odor being observed) and at times actual chills. His fever, malaise and chilliness have persisted for the past four years, occurring, however, only weekly and lasting for two or three days. The other symptoms have been present from time to time during the past four years, but have not been very prominent. During the past two years he has received inadequate antileutic treatment, 64 grains of quinine sulphate daily for five weeks, tonsillectomy and many drugs for symptomatic relief. In 1934, he came to the Hutchinson Clinic for study. On two occasions he was referred to Charity Hospital for observation and further study. His temperature usually reaches 102° and rarely goes as high as 103°.

The patient's past history is of little significance except for his venereal history. In 1918 he had a penile sore which was diagnosed as a chancre. He was given a complete course of antileutic treatment at the Algiers Naval Station. The patient's dietary habits have been normal but included raw milk.

The physical examination presented no findings of interest except an enlarged spleen. The spleen is rather firm, smooth, not tender and enlarged about 4 cm. below the costal margin on deep inspiration.

There have been many laboratory studies done, most of which have been normal, as blood picture, urinalyses, phthalein excretion, blood chemistry, blood culture (once), Wassermanns at least six times, gastric analyses, stools, spinal fluid, agglutination for typhoid, *paratyphoid A* and *B*, *B. proteus X19*, *B. dysenterae* (Hiss and Flexner), *B. melitensis* and *B. abortus*, coagulation time, bleeding time and platelet count, erythrocyte volume studies, two gastrointestinal series, urologic studies including roentgen ray and a gall bladder visualization which showed some failure of concentration. Skin tests for undulant fever were positive on two occasions and the average opsinophagocytic index was moderately phagocytic (average of 23 bacteria phagocytized per cell). There was some increase in the rate of sedimentation of the red blood cells.

The three diagnoses which have been most prominent during the course of his four years of illness are: (1) chronic malaria; (2) latent syphilis, and (3) abdominal Hodgkin's disease. However, at the present time, in view of the duration of his illness, the history and the laboratory findings (negative agglutinations, positive skin test, and moderately positive opsonophagocytic index) undulant fever appears to be the most probable condition. Undulant fever, however, is never an absolutely positive diagnosis without a positive blood culture.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

Durng the month of June the Society held two meetings, a Scientific Meeting on June 8 and a Clinical Meeting at the United States Marine Hospital on June 22.

June 8

Clinical Syndromes Resulting from Dysfunction of the Endocrine Glands.

By: Dr. Edward H. Rynearson, Mayo Clinic, Rochester, Minnesota.

Dr. Rynearson answered questions put to him on interesting cases.

June 22

Clinical Meeting—United States Marine Hospital

1. Helium and Oxygen Therapy.
   By Dr. Wm. L. Smith.
   Discussed by Dr. James C. Cole and Ansel Caine.
2. Fractures of Long Bones and Methods of Treatment (Lantern Slides).
   By Dr. Richey L. Waugh.
   Discussed by Drs. Edward S. Hatch and Waldemar R. Metz.
3. The Shrunken Lung.
   By Dr. Antonio Mayoral.
   Discussed by Dr. Eleazar R. Bowie.
4. Wilm's Tumor with Report of Two Cases.
   By Dr. John A. Trautman.
   Discussed by Drs. Cassius L. Peacock and John A. Lanford.
5. Elephantiasis of Scrotum following Bilateral Inguinal Glandular Tuberculosis. (Case Presentation.)
   By Dr. Waldemar R. Metz.
   Discussed by Dr. M. T. Van Studdiford and E. von Haam.

Dr. Gilbert C. Anderson attended the Harvey Cushing Society held at Rochester, Minnesota.

Drs. Walter J. Otis, H. R. Unsworth and T. A. Watters attended the meeting of the American Psychiatric Association, American Phychoanalytic Association, American Psychopathological Association and the Association for the Study of Convulsive Disorders held recently in St Louis.

Dr. Otis also attended the American Association for the study of Mental Deficiency.

An honorary life membership in the Hotel Dieu Alumnae Association was presented Dr. Ruth G. Aleman at a meeting of the group held May 25, 1936. Dr. Aleman completed her nursing course in 1915, then took up the study of medicine, specializing in pediatrics.

We regret to report the loss by death of one of our active members, Dr. George Joseph Hauer.

Letters of Membership Transfer were issued to Dr. A. Scott Hamilton and Dr. Dudley M. Stewart. Dr. Hamilton is moving to Monroe, and Dr. Stewart to the Toledo Clinic in Toledo, Ohio, to practice bone and joint surgery.

Drs. Oscar Blitz and Dominick J. Geraci were elected to Active Membership.

Dr. Alton Ochsner received the honorary degree of Doctor of Science at the University of South Dakota, his Alma Mater, at Vermilion, S. D.

TREASURER'S REPORT

ACTUAL BOOK BALANCE: 4/30/36	$2,611.27
Credits:	$ 478.89
	$3,090.16
Expenditures:	$ 819.49
ACTUAL BOOK BALANCE: 5/30/36	$2,270.67

LIBRARIAN'S REPORT

During May, 31 books were added to the library. Of these, 7 were received by purchase, 7 by binding, 4 by gift and 13 from the New Orleans Medical and Surgical Journal. Notation of new titles of recent date is given below.

The Library has loaned 547 books and journals to doctors during the month, or more than one to each member of the Society. In addition, 720 volumes were loaned to students for overnight use, making a total of 1267. These figures do not include the great use of books and journals within the Reading Rooms.

On request of physicians, members of the staff have collected material on the following subjects during May:

Jake paralysis.
Injection of air into knee for Roentgen diagnosis.
Theories of Galen and Avicenna regarding varicose veins.
Ultrafiltration in allergy.
Women in medicine.
Injuries to semilunar cartilage.
Elephantiasis of penis.
Fibroma of ovary.
Teratoma of testicle.
Rennin.
Irradiation cataract.
Quinine in ophthalmology.
Epidemiology of undulant fever.
Pituitary cachexia.
Hirsutism.
Stricture of vagina.
Diabetic coma.
Undescended testicle.

The Library is closed during the evening hours in the months of June, July, August and September. Doctors who are unable to come for their books during the day, are requested to telephone the Library, and the material will be left for them at the Information Desk on the first floor.

NEW BOOKS

Harrison, B. J. M.—Textbook of Roentgenology. 1936.

Zahorsky, John—Pediatric Nursing. 1936.

Clendenning, Logan—Balanced Diet. 1936.

American Medical Association—Training of the Neurologist and Psychiatrist. 1934.

Martini,—Principles and Practice of Physical Diagnosis. 1935.

Maltz, Maxwell—New Faces, New Futures. 1936.

Steindler, Arthur—Mechanics of Normal and Pathological Locomotion in Man. 1935.

Cabot, Hugh—Doctor's Bill. 1935.

Buehler, E. C.—Free Medical Care. 1935.

Harvey Society—Lectures, 1934-35. 1936.

Evans, C. L.—Recent Advances in Physiology. 1936.

Rhinehart, D. A.—Roentgenographic Technique. 1936.

Sansum, W. D.—Normal Diet and Healthful Living. 1936.

Miller, E. L.—Studies in North American Cercariae. 1936.

McIver, M. A.—Acute Intestinal Obstruction. 1934.

Practitioners Library of Medicine and Surgery. v. 10. 1936.

Gilbert C. Anderson, M. D., Sec.

LOUISIANA STATE MEDICAL SOCIETY NEWS

REPORT OF THE HOUSE OF DELEGATES TO GENERAL MEETING

The House of Delegates held their first meeting on Monday, April 27, 1936, and completed their work on Wednesday, April 29.

The President, Dr. Courtland P. Gray, presented a most interesting report and after due consideration by a committee this report was approved. The most important thought stressed in this report was the necessity of developing ways and means for the increasing of membership in our Society, which has practically been adopted as the present slogan of the Society.

The Secretary-Treasurer's report was submitted with a great deal of detail information concerning the activities of his office along with the financial status of our funds. This report evidences a rather favorable condition of our finances. A map with statistical data of the various Parishes was shown indicating their percentage of organization as of 1935. When this was presented it was very favorably received by the House. The special Committee on the Secretary's report took occasion to compliment the Secretary-Treasurer's office on the efforts and manner in which the affairs of the Society are directed.

The Chairman of the Council, along with the various Councilors of the eight Districts, submitted reports showing the present status of the Districts and offered some constructive suggestions for their respective Districts.

The Committee on Medical Education submitted the personnel of a subcommittee to arrange and to give appropriate study in effecting post-graduate study for the members of our Society. They approve most heartily the plan to include in the curriculum of the medical schools a course in the value of medical organization but they could not state how such additional education could be scheduled in their present curriculums.

The Committee on Scientific Work made their report which carried a recommendation, which was approved, that in arranging for the scientific program preference be given our members over out-of-State men, when consistent.

The Committee on Medical Defense presented a very comprehensive report covering the vast amount of work which they have been called upon to render during the past year, incident to malpractice suits which had been filed against our members. In their report they stated that they regretted having to refuse defense in one case, upon recommendation of their Counsel. This part of the report was discussed extensively on the floor of the House and the individual merits of the case forcibly presented, asking that the State Society grant medical defense protection to the physician in question. Appropriate resolutions were offered to cover this request, at the same time carrying recommendation that the By-Laws of the Society governing Medical Defense be appropriately revised in order to remove such objectionable features which might occur again. At the same time the request was made that the expenses in the defense of this case be paid out of the General Fund.

The Committee on Journal submitted a detailed report covering their work for the past year including both editorial and economic comments. Subsequent to this report the Journal Committee was complimented upon their work during the past year.

The Committee on Cancer submitted a very constructive report of their work during the past year and stated plans to be perfected for the carrying on of this work throughout the State. One hundred dollars was again appropriated for the expense of this work.

The Committee on Medical Economics submitted their report with the following recommendations: (1) That the American Medical Association formulate and state clearly its understanding of the present plan for medical services; (2) that they endorse the plan of the A. M. A. in regard to compulsory health insurance; (3) that the A. M. A. have a publicity committee in the interest of an educational campaign and (4) that the A. M. A. be urged to assume leadership in outlining a detailed plan for medical service which might develop. The Washington plan of sickness insurance was strongly recommended.

The Committee on Expert Testimony asked that an extention of time be granted in order to perfect their report for the next meeting of the Executive Committee.

The report of the Committee on Mental Health contained a recommendation that meetings in reference to Mental Health topics be arranged by Parish Societies. This was adopted.

The Advisory Committee of the Woman's Auxiliary submitted a report which was received and filed.

The Committee on Arsenicals submitted a report that recommended the support of the Louisiana State Board of Health in the prevention and treatment of venereal disease.

The Committee on Maternal Welfare made a report which was referred to the Executive Committee.

The State Board of Medical Examiners submitted a very comprehensive report which was adopted. Dr. J. J. Ayo of Jackson, and Dr. Clarence Lorio, Baton Rouge, were appointed as names to be submitted to the Governor at the expiration of Dr. Ayo's term in August 1936.

It was brought to the attention of the House that the Army Medical Library was in serious danger and was handicapped on account of the failure of congress to appropriate suitable funds for its maintanance. It was decided to approve a recommendation that the various Parish and District Societies have their respective Representatives and Senators use their influence and support in securing this appropriation which is the arm of medical service.

Upon the recommendation of the Budget and Finance Committee it was decided that when the Indigent Physicians' Fund reached $2,000 the 50 cents per capita allotted thereto would be deposited to the Medical Defense Fund until same reached $20,000.

The next annual meeting of the Society will be held in Monroe, La., in April, 26-28, 1937.

STATE LEGISLATURE ACTION ON BILLS OF INTEREST TO MEDICAL PROFESSION

Below are detailed the various bills introduced into the Legislature during the present session, of interest to the medical profession, together with the action taken on them.

Senate Bill No. 251—Introduced by Mr. Cranor—Creating a Board of Chiropractic Examiners and regulating the practice. Killed.

Senate Bill No. 190—Introduced by Mr. Carbajal—Creating State Tuberculosis Commission. Has not come up yet for final disposition.

Senate Bill No. 44—Introduced by Mr. Brittingham—Permitting the use of certified copies of Charity Hospital records as evidence in Court. Killed in Senate. A similar Bill in House, with objectionable features removed, passed.

House Bill No. 208—Deleting all objectionable features of Senate Bill No. 44. Introduced by Mr. Blaise—Providing that a certified copy of records from either of the State Charity Hospitals and such records in court will be prima facie evidence of contact. Passed.

Senate Bill No. 45—Introduced by Mr. Britting-

ham—Making communications between doctor and patient privileged. No final action. Will probably be killed.

Senate Bill No. 46—Introduced by Mr. Brittingham—Making dying declarations admissable evidence in civil cases. Bill will probably pass, however no final action as yet. No objections.

Senate Bill No. 9—Introduced by Mr. Wingrave—Proposing a constitutional amendment for the issuance of $8,000,000 in bonds for the new main building of the New Orleans Charity Hospital. Passed Senate.

Senate Bill No. 7—Introduced by Mr. Ogden—Making a tax to the mental defective a penitentiary offense. Passed.

House Bill No. 83—Creating a State Hospital Board with the authority to contract for the care of indigent persons in privately owned hospitals and institutions. Passed.

House Bill No. 86—Authorizing State Board of Health to provide medical, surgical and other care to cripple children. Has passed House. Not before Senate yet.

House Bill No. 294—Introduced by Mr. Burke, Mr. Morvant and Mr. Stitch—Amending existing law authorizing Charity Hospital to issue $8,000,000.00 bonds for new plant. Passed.

House Bill No. 295—Mr. Burke, Mr. Morvant and Mr. Stitch—Amending dedication of $400,000.00 per annum corporation franchise tax for servicing Charity Hospital so as to permit dedication of funds to any purchaser of bonds. Passed.

House Bill No. 358—Introduced by Mr. Stitch. Privilege of recordation of births and deaths by hospitals. Passed.

House Bill No. 361—Introduced by Mr. Stitch—Authorizing physicians, midwives and others required to issue certificates of births and deaths to charge fee of twenty-five cents each. Bill passed House. Not before Senate yet.

House Bill No. 440—Introduced by Mr. Eastland and Mr. McCurnin—Provides for voluntary admission to insane hospitals. Killed.

House Bill No. 501—Introduced by Mr. Hand. Exempting chiropodists from paying any license to State, City or Parish. Passed.

House Bill No. 572—Introduced by Dr. Toler—Amending the act creating Board of Medical Examiners and regulating the practice of medicine and surgery in the State. Killed.

House Bill No. 681—Introduced by Mr. Scarns—Set up of School Childrens' Health and Medical Board—Appropriation of $200,000.00 for its support. Has not come up for final passage.

House Bill No. 688—Introduced by Mr. Burke—Amending the act relative to the practice of pharmacy. Passed.

House Bill No. 460—Prohibiting soliciting of business to adjusting personal injury or property damage arising therefrom. Passed.

House Bill No. 409—Introduced by Mr. Gilmore—Requiring that reflector glasses be placed on all automobiles—front and rear. Passed.

Senate Bill No. 155—Introduced by Mr. de la Houssaye—Relieving automobile operators of responsibility for injury caused to guest passengers except by wiliful misconduct. Passed.

House Bill No. 355—Making State Board of Health a central filing office for records of marriage. Passed.

House Bill No. 356—Providing for the recordation of certificates in case of stillborn child as in case of death. Passed.

House Bill No. 358—Requiring hospital to furnish lists of births and deaths to State Board of Health monthly. Passed.

House Bill No. 360—Authorizing the State Board of Health to compel City and Police Juries to file vital statistics. Passed.

House Bill No. 464—Introduced by Mr. Morvant. To define a maternity home and to provide for the investment and superivison of maternity homes by the State Board of Health and State Department of Public Welfare. Requiring every maternity home to obtain an annual license from the State Department of Public Welfare with the approval of the State Board of Health. The content of license is defined in this Bill. The Bill forbids any person connected with a maternity home to dispose of any child, requiring every maternity home to report abandoned children to the State Department of public welfare within 24 hours after abandonment. This Bill passed the House but will probably be killed in the Senate.

There have been a number of compensation bills introduced. Efforts have been made to have the minimum doctors' fee increased from $250 to at least $350 or more.

C. Grenes Cole, Chairman,
Committee Public Policy and Legislature.

NEWS ITEMS

Dr. O. W. Bethea, Professor of Therapeutics in the Graduate School of Medicine, Tulane University, was honored by being asked to participate in the graduate short course put on by the University of Florida and the Florida State Medical Association from June 22 to June 27.

Dr. Wiliard R. Wirth, Assistant Professor of Clinical Medicine in the Graduate School of Medicine, Tulane University, addressed the 15th meeting of the Fort Smith Clinical Society at Fort Smith, Arkansas, on Wednesday, June 10, 1936, on "The Significance of Cardiac Arrhythmias as Encountered in General Practice", with lantern slide demonstrations.

Dr. Charles J. Bloom, Professor of Pediatrics in the Graduate School of Medicine, The Tulane University of Louisiana, addressed the State Medical Association of Texas at their meeting held May 25, 26, 27 and 28 at Houston, the titles of which were as follows:

"The Evaluation of Teeth in Pediatrics"; "Hyperthyroidism in Children"; "Rickets"; "Appendicitis in Children".

Dr. C. C. Dauer, Professor of Preventive Medicine in the Graduate School of Medicine, The Tulane University of Louisiana, will be absent from the city from June 15 to August 15. The purpose of his absence is to carry on tuberculosis study in Savannah, Ga., Washington, D. C., New York City, Louisville, Ky., and cities in Tennessee. Upon completion of this work Dr. Dauer will spend his vacation in the North.

Passed Assistant Surgeon C. B. Spncer has been relieved from duty, U. S. Quarantine Station, New Orleans, (Algiers) Louisiana and assigned to duty at the U. S. Quarantine Station, Mobile, Alabama.

Passed Assistant Surgeon R. B. Holt has been relieved from duty at the Marine Hospital, New Orleans, Louisiana and directed to report to the Assistant Surgeon General in Charge of the Hospital Division, U. S. Public Health Service, for duty.

Acting Assistant Surgeon H. M. Heitsch has been relieved from duty, U. S. Marine Hospital, New York City, N. Y., and ordered to U. S. Quarantine Station, New Orleans (Algiers) La., for duty.

Acting Assistant Surgeon Joseph P. Chiasson has been relieved from duty, U. S. Marine Hospital, Mobile, Alabama and directed to proceed to the U. S. Quarantine Station, New Orleans, (Algiers) Louisiana.

Surgeon H. E. Trimble has been relieved from duty at the San Francisco Quarantine Station and directed to proceed to the U. S. Quarantine Station, New Orleans, (Algiers) Louisiana, and assume charge of quarantine station and medical inspection of aliens at that place.

Assistant Surgeon Paul E. Walker has been relieved from duty, Los Angeles Quarantine Station, Calif., and directed to proceed to New Orleans, La., for duty.

Acting Assistant Surgeon F. C. Makepeace has been relieved from duty at the U. S. Quarantine Station, New Orleans, (Algiers) Louisiana and directed to proceed to the U. S. Quarantine Station, Honolulu, T. H.

1936 GRADUATE FORTNIGHT of the NEW YORK ACADEMY OF MEDICINE

For the Annual Graduate Fortnight of the New York Academy of Medicine a subject of outstanding importance in the practice of medicine and surgery is selected and is presented from as many angles as possible. An attempt is made to offer to the profession a grasp of the advances in medicine so that the busy practitioner may be informed as to the last word on a given topic.

The Ninth Annual Graduate Fortnight will be held October 19-31 and will be devoted to a consideration of Trauma; Occupational Diseases and Hazards.

Twenty-three important hospitals of the City will present coordinated afternoon clinics and clinical demonstrations. At the evening meetings prominent clinicians from various parts of the country who are recognized authorities in their special lines of work will discuss various aspects of the general subject.

Complete information may be obtained from Dr. Frederick P. Reynolds, The New York Academy of Medicine, 2 East 103d Street, New York City.

SPECIAL NOTICE

Special attention is directed to physicians leaving the city to the fact that appropriate announcement in the professional cards can be arranged for $2.00 per insertion. Communicate with our office in regard to details.

HEALTH OF NEW ORLEANS

The Department of Commerce, Bureau of Census reports that for the week ending May 16, there were 147 deaths in the city, divided 81 white and 66 colored, giving a rate for the group as a whole of 16.0; for the white race 12.4 and for the negro 24.7. The infant mortality rate this week was 93. For the next week, ending May 23, the 21st week of the year, the death rate had increased to 16.5 as a result of 152 deaths. These were apportioned 77 white; rate 11.8, and 75 colored; rate 28.1. The infant mortality rate which was 81 about corresponded with the previous week. For the week ending May 30, the number of deaths dropped to 144; 94 due to deaths in the white race and 65 in the negro. The death rate for the whole group was 15.6; the white 12.1 and the negro 24.4. The infant mortality rate dropped this week to 64. For the week ending June 6, there was a sharp rise in the number of deaths; 178 people expired this week. Of these 103 were white, with a rate of 15.7 and 75 were negroes with a rate of 28.1. The death rate for the group as a whole was 19.3. The infant mortality rate was 64.

INFECTIOUS DISEASES IN LOUISIANA

Dr. J. A. O'Hara, Epidemiologist for the State of Louisiana, has furnished us with the weekly morbidity reports for the State of Louisiana, which contain the following summarized information: For the 21st week of the year, ending May 23, there were reported 88 cases of whooping cough, 72 of measles, 60 of pneumonia, 52 each of malaria and pulmonary tuberculosis, 44 of influenza, 36 of cancer, 25 of syphilis, 12 of diptheria and 11 of typhoid fever. In this week there was a very sharp decrease in the number of cases of influenza. In the report for the previous week there were 506 cases listed as contrasted with 44 this week. Of the unusual diseases, 1 case of spinal meningitis was reported from Orleans Parish and 1 case of tularemia from Sabine and 1 from Orleans. The report of the 22nd week of the year, ending May 30, showed whooping cough still prevailing, 59 cases being listed with the following diseases in frequency appearing in double figures: 47 of syphilis, 43 each of pneumonia and pulmonary tuberculosis, 32 of measles, 24 of malaria, 10 each of typhoid fever and cancer. Typhoid fever cases were repored throughout the State, not one Parish having more than 2 cases. There were 3 cases of tularemia listed this week. For the week ending June 6, syphilis came into its own again, leading all reported diseases as is the usual custom, 68 cases appearing on the list, followed by 41 cases of whooping cough, 38 of malaria, 36 of tuberculosis, 24 of cancer, 22 of pneumonia, 15 of typhoid fever, 14 of diphtheria, and 13 of measles.. Franklin Parish was the only Parish in the State with more than 2 cases of typhoid fever. There were 3 cases of cerebrospinal meningitis reported from Orleans Parish, one of which was imported. For the 24th week of the year, ending June 13, there was a sharp increase in the number of cases of pneumonia, 52 appearing on the report for this week. This was followed by 40 of malaria, 31 of pulmonary tuberculosis, 27 of cancer, 25 of syphilis, 22 of influenza, 15 of measles, 13 of typhoid fever and 11 of diphtheria. Of the rarer diseases, 1 case of smallpox was reported from Red River Parish, 2 cases of poliomyelitis; 1 from Concordia and 1 from Franklin Parish. Of the 3 cases of tularemia reported, 2 were from East Carroll and 1 from Sabine.

WOMAN'S AUXILIARY
Louisiana State Medical Society

President: Mrs. James Byron Vaughan, Monroe.

President-Elect: Mrs. George D. Feldner, New Orleans.

First Vice-President: Mrs. F. G. Ellis, Shreveport.

Second Vice-President: Mrs. T. H. Watkins, Lake Charles.

Third Vice-President: Mrs. E. B. Middleton, Homer.

Fourth Vice-President: Mrs. R. R. Arceneaux, Welsh.

Recording Secretary: Mrs. C. Grenes Cole, New Orleans.

Corresponding Secretary: Mrs. Joseph P. Brown, Monroe.

Treasurer: Mrs. Courtland P. Gray, Monroe.

Parliamentarian: Mrs. R. T. Lucas, Shreveport.

CADDO PARISH

The Woman's Auxiliary to the Shreveport Medical Society held its annual business meeting in the home of Mrs. J. A. Hendrick on Jordan Street.

With Mrs. F. G. Ellis presiding, the annual business reports were given. Mrs. Sam Kerlin, delegate to the State Medical Auxiliary meeting gave an account of the meeting held in Lake Charles and displayed the minature model of The Pines Preventorium which was exhibited at the meeting there and in Kansas City. Mrs. C. P. Rutledge, delegate to the National Association in Kansas City, gave a report of the meeting. The business was concluded with the installation of the following officers for the ensuing year:

President: Mrs. R. T. Lucas.

President-Elect: Mrs. J. T. Crebbin.

First Vice-President: Mrs. W. J. Sandidge.

Second Vice-President: Mrs. M. S. Picard.

Recording Secretary: Mrs. E. L. Gill.

Corresponding Secretary: Mrs. J. M. Bodenheimer.

Publicity Chairman: Mrs. M. D. Hargrove.

Parliamentarian: Mrs. C. E. Rew.

Mrs. M. D. Hargrove, Publicity Chairman.

JEFFERSON DAVIS PARISH

The Woman's Auxiliary to the Jefferson Davis Medical Society entertained their husbands with a chicken barbecue May 21 at the home of Dr. and Mrs. J. W. Faulk in Crowley. The Faulk's lovely garden back of their home was all that could be desired for a perfect setting for the occasion. This was the Auxiliary's first attempt to entertain their husbands; it proved to be a grand success and long to be remembered. There being no auxiliary in Acadia Parish, Mrs. Faulk is affiliated with that of Jefferson Davis.

Most of the members attended the state convention held in Lake Charles. One of our members, Mrs. R. R. Arceneaux, was elected fourth vice-president at the convention.

The officers elected to serve our auxiliary for the ensuing year are:

President: Mrs. G. W. Remage, Jennings.

Vice-President: Mrs. Claude A. Martin, Welsh.

Secretary: Mrs. R. R. Arceneaux, Welsh.

Treasurer: Mrs. F. W. Harrell, Jennings.

We are proud of the addition of the two new

members, making our membership total ten.

Dr. and Mrs. F. W. Harrell of Jennings are enjoying a summer home at Lake Arthur.

Dr. and Mrs. R. R. Arceneaux of Welsh have just returned home from a ten-day trip to Mexico.

Mrs. Claude A. Martin, Publicity Chairman.

OUACHITA PARISH

The Woman's Auxiliary to the Ouachita Parish Medical Society held both its April and May meetings at the Lotus Club. Interesting programs were rendered and delectable luncheon was enjoyed. The outstanding feature of these meetings were the two speakers who brought to us interesting topics of discussion—Dr. John Snelling using as his subject "Cancer" and Dr. D. M. Moore, "Roentgenology."

Mrs. A. G. McHenry and Mrs. C. P. Gray brought news of interest from both the state meeting of the Woman's Auxiliary to the Louisiana State Medical Society which convened in Lake Charles and from the Woman's Auxiliary to the Mississippi State Medical Society which convened in Jackson.

After the reports were given every member pledged herself and her efforts to making this year's work the most outstanding.

The following officers were elected for 1936-37:
President: Mrs. J. P. Brown.
First Vice-President: Mrs. A. L. Peters.
Second Vice-President: Mrs. A. D. Tisdale.
Treasurer: Mrs. I. J. Wolff.
Recording Secretary: Mrs. D. T. Milam.
Corresponding Secretary: Mrs. Henson Coon.
Publicity Secretary: Mrs. W. L. Bendel.
Historian: Mrs. P. L. Perot.
Parliamentarian: Mrs. E. R. Young.

Mrs. W. L. Bendel, Publicity Chairman.

A. M. A. MEETING

For the following interesting and delightful report of the Woman's Auxiliary meeting in Kansas City, Mo., in May, we are greatly indebted and thankful to Mrs. A. L. Levin of New Orleans.

"Upon the receipt of an official envelope from New Orleans on the afternoon of my arrival in Kansas City, I was converted from an interested spectator to a delegate representing the Auxiliary to the Louisiana State Medical Society. I was accorded the pleasant duty of reading the State President's annual report.

"I have always felt that conventions could be compared to a melting pot where each delegate brings her bit of precious metal, places it in the seething cauldron, mixes it well and then tries to remold something useful and tangible for the benefit of the organization. Over 1200 doctors' wives, sisters, mothers and widows registered at this convention and it was indeed most interesting and very inspiring to exchange ideas with our sister states and with visitors from Cuba, Honolulu and even from far off China.

"One of the highlights of this gathering of representative women was a personal message from the President of the United States congratulating our capable National President, Mrs. Rogers N. Herbert, for her splendid work along humanitarian lines and particularly her splendid accomplishments in the field of care for the crippled child. The health education program seemed to be one of the outstanding features in the states and toward that end, circulating libraries were established and periodic talks were given by outstanding physicians, and in some of the rural districts, first-aid courses were given, also courses in 'Home care of the Sick.' It is most natural for doctors' families to be interested in hospital work and many state auxiliaries have been active in this field. Contributions have been made ranging from $50.00 for supplies to $200.00 to help liquidate a mortgage.

"In some communities, student loan funds were sponsored for the education of members of doctors' families. Subscriptions to Hygeia were doubled in many states and even trippled in some localities. The membership of the National Auxiliary was reported as having had its greatest increase in years, the membership now standing at 16,525. In my humble opinion, the most outstanding accomplishment was reported by the Committee on Legislation of the Auxiliary to the Oregon State Society who was responsible for defeating legislation to socialize medicine. This is a question which may strike close to home at some time in the future and it is well for us to be prepared to do our bit.

"In evaluating the store of information received from the many national and state reports, one must realize that the activities of each State auxiliary must be governed by the needs in that particular locality. Inasmuch as Louisiana has filled all the requirements of the Governing Board of its State Medical Society, it has served its purpose well and Mrs. H. B. Gessner, our lovable State President, is to be congratulated upon her accomplishments during 1935-36."

The above report is intensely interesting and inspiring and our hearts should swell with pride when we note what splendid work this woman's auxiliary is accomplishing. Let us hope that these accomplishments will merely be stepping-stones to even greater goals in the large and diversified field of endeavor that is open to us.

Mrs. George D. Feldner, Chairman,
Press and Publicity.

BOOK REVIEWS

The Management of Colitis: By J. Arnold Bargen, M. D., F. A. C. P. New York. National Medicine Book Company, 1935. pp. 233. Price $3.00.

The author has, in the short space of 233 pages, presented a rather complete review of colon disease, organic and functional. The volume begins with a consideration of the normal colon from an anatomic and physiologic aspect; then there is presented the etiology, pathology, diagnosis, complications and treatment of chronic ulcerative colitis, amebic colitis, tuberculous colitis, mucous colitis or irritable colon, and finally a group of conditions to be distinguished from colitis.

Chronic ulcerative colitis is given special emphasis which can be understood since the author has devoted much time and contributed much in this field. The bacteriological and cultural methods for isolating the diplococcus, which Bargen considers fairly specific in the etiology of the disease, is given in detail. Whether or not one accepts the specificity of the "Bargen diplocccus" as the cause of the disease one must have respect for the results the author has obtained at the Mayo clinic with a large series of cases.

Complicatons of chronic ulcerative colitis are fully discussed. There are relatively few complications considering the large ulcerating surface. Perirectal abscess is the earliest and most frequent complication; this is closely followed in frequency by rectal stricture. Other complications include septic conditions as endocarditis, arthritis, erythema nodosum and uveitis. Carcinoma occurs in only 2 per cent of the cases, and polyposis was found as a complication in 9 per cent of cases. Pyodermia gangrenosa is a skin complication of chronic ulcerative colitis.

Treatment of chronic ulcerative colitis includes general measures in regard to diet, rest, removal of foci, vitamins, drugs, blood transfusions, as well as specific therapy. A specific serum is used. This serum is made by immunizing horses against strains of the diplo-streptococcus. This serum is given to the acute cases either intravenously or intramuscularly, depending on the severity of the cases. Irrigations are condemned generally.

Surgery is resorted to only when all medical measures have failed, or in cases of emergency as in uncontrollable hemorrhage. Ileostomy is the surgical treatment of choice.

Amebic and tuberculous colitis are given rather brief but complete discussion as to their definition, history and evidence; etiology, pathology, diagnosis and treatment. Final diagnosis rests on bacteriological and microscopic findings. Stress is rightfully laid upon the use of the proctosigmoidalscope in investigating these conditions, especially amebiasis. Methods of identifying and finding the amebic cysts are given. The author is partial to emetine and treparsol in the treatment of amebiasis.

Mucous colitis with its various synonyms is given thorough consideration. As underlying causes are given: overwork, overeating, fatigue, nervous tension, expcsure, local irritations by laxative and colonic irrigations. The treatment includes reassurance of patient, rest, and bland diet. Colon irrigations are condemned.

Conditions to be distinguished from colitis are discussed in the following order: polyposis, cancer, regional ulcerative colitis, regional enteritis, diverticulosis, and diverticulitis, food poisoning, typhoid fever, bacillary dysentery, parasitic dysentery exclusive of amebic dysentery, granulomatous lesions, actinomycosis, appendicitis, inflammation of Meckel's diverticulum, sprue, pellagra, pernicious anemia, exophthalmic goiter, uremia, benign and rare tumors, fecal impaction, foreign bodies, volvulus and intussusception, hemorrhoids, and agranulocytic angina.

Excellent illustrations of pathological specimens and x-rays supplement the descriptive matter. Case histories and personal experiences with patients are described after the consideration of each condition. In general this volume is a useful compilation of our present day knowledge of this important problem, colon disease.

HERBERT L. WEINBERGER, M. D.

Clinical Atlas of Blood Diseases: By A. Piney, M. D., M. R. C. P. and Stanley Wyard, M. D., M. R. C.P. 3d. ed. Philadelphia. P. Blakinson's Son & Co., Inc., 1935. pp. 109. Price $4.00.

Rare indeed does one find a text-book of hematology so condensed and so beautifully illustrated as the Clinical Atlas by Piney and Wyard. As stated by the authors in the preface to the first edition the book is intended to fill a need for which no other recent book even pretends to cater. It is a small volume in which is combined the essential features of a text-book of haematology with an atlas, so that the practitioner or student is able to find a brief account of most any haematological malady with which he comes in contact and if presented with a blood-film is able to find an illustration corresponding with its general character. In the third edition the whole of the text has been revised and rewritten to conform to the progress in clinical haematology.

This little book contains: (a) Conditions in which the main incidence of the disease is on the red cells or on the erythropoiesis.

(b) Conditions in which the main incidence of the disease is on the white cells or on the leukocytopoiesis.

(c) Conditions in which the main incidence of the disease is on the spleen.

(d) The so-called hemorrhagic diathesis.

Since malaria is a disease found in practically all parts of the world and the blood cells, especially the erythrocytes play an important part in the growth and development of the malarial parasite, one would naturally expect such an excellent Atlas as this to include a chapter on malaria with plates showing the various forms and the blood cell changes.

The teacher, student, practitioner and specialist seeking information of the most recent views of diseases of the blood will find no better reference than Clinical Atlas of Blood Diseases by Piney and Wyard.

ELIZABETH BASS, M. D.

The True Physician: By Wingate M. Johnson, M. D. New York. The MacMillian Publishing Company, 1936. pp. 157. Price $1.75.

Occasionally one is privileged to review a volume which is so good that he feels almost inclined to shout so that all might hear "this is a book that you should read". After reading Dr. Johnson's volume this is the feeling that I have.

In the practice of medicine there are certain fundamentals which every doctor is supposed to be familiar with—The Oath of Hippocrates and the Code of Medical Ethics. The Oath of Hippocrates may be likened to our Constitution and the Code of Medical Ethics to the laws which are accepted by all. Authors in various periods have rendered judgments similar to those of our Supreme Court decisions. The Religio Medici of Thomas Browne; The Confessio Medici of Sir James Paget; The Consecratio Medici of Harvey Cushing; The Doctors' Table Talk by James G. Mumford; The Soul of the Surgeon by Rudolph Matas are representative of the type of guides for the conduct of the doctor which have been written in the past.

Now comes Dr. Johnson with the True Physician. This volume must be the mirror of his own life and work. It could not have been written by any one except an individual with ideals, and he has set these down for the benefit of the future generations.

It has been said that talking to a friend is like thinking out loud. Those who read this volume will count themselves fortunate, as they, at least, can feel that Dr. Johnson has acted as a true friend to them.

The advice to the intern and to the young doctor is on the whole so good that I think that each graduate in medicine should procure a copy, put it on his desk and make use of it as he would an encyclopedia. In truth it is encyclopedic in information and as a guide for conduct.

The admonitions for the cultivation of habits of study, courtesy, gentleness, attentiveness to duty, as well as those with reference to reading, writing and attendance at medical meetings should be accepted for their full value.

Quotations from this volume would be interesting, but I think that it is such a book that one should read leisurely, make notes, put it aside and then reread it when in doubt.

Dr. Johnson is to be congratulated on having written this volume and the profession should be grateful that such a volume is available for the guidance of so many. This is one time when it may be said with truth, this book should be in every doctor's library.

ISIDORE COHN, M. D.

Preventive Medicine and Hygiene: By Milton J. Rosenau, 6th ed. New York City. D. Appleton, Century Company, 1935. pp. 1481. Price $10.00.

Rosenau, in this new edition, has again proved that preventive medicine moves forward with the general trend of scientific advance. In it he has broadened the scope of the earlier editions by including certain aspects of preventive medicine which have heretofore been neglected not only by preventive medicine but most other standard textbooks as well. In particular, the author has extended his views on the important subjects of personal, mental and social hygiene. In the latter, he has boldly included new chapters on sex hygiene and contraception. The new emphasis on the hygiene of personal living has removed any possibility of looking on this work as a reference book only for sanitarians and public health workers. It is unequivocally a reference book for practitioners.

For the man in general medicine there is no more useful resume on the dermatoses which he finds on his patients than the chapter and tables on occupational diseases. In these sections the physician who is generally unaware of the many agents of disease with which the tradesmen and laborers come in contact in their daily work, will find a most useful and comprehensive discussion of where these toxic agents exist and how his patients come in contact with them.

The author has retained the high quality of his work as an authentic reference source for workers in all branches of public health and industrial medicine. But what impresses the reviewer is his success in accomplishing the difficult task of bringing the challenge to the general practitioner to interest himself more in the prevention of disease and at the same time showing him the way he can do it.

W. H. PERKINS, M. D.

A Textbook of Surgery: By American Authors. Frederick Christopher, ed. Phila. W. B. Sounders Co., 1936. pp. 1608. Price $10.00.

Two types of textbooks are available for the student, one which is becoming increasingly less common in this age of advancement by geometrical progression by a single author, the other by an editor, who wisely or unwisely chooses his contributors. Perhaps no surgical text by a single

author has or ever will enjoy the popularity received by Osler's textbook of medicine. There are or have been certain advantages to the one man edition; viz., arrangement, lack of repetition, and, if he is an author in singular merit like Osler, style, but these advantages in the last few decades have become outweighed for any one except a genius by knowledge which has become so vast and extensive with modernity, up-to-dateness in all ranges of the various subjects of a particular specialty. There is an indefinite limit to the speed with which a single mind can assimilate and rearrange material for a text and that limit, variable as it is, has been approached because of the increasing aggregation of knowledge so that now either authority or authenticity, or both, is liable to violation by the ambitious one who attempts the huge task of writing alone a text that would be successful. Thus today there is more and more *raison d'etre* for the text edited by one man, written by many.

What distinguishes a textbook from a "System" is something more than a single or pleurality of volumes. In the System a fulness of knowledge comprising even the marginal advances of uncertainties as well as the apparently certain is permissible. There is room and a receptive audience for the reasons and weighing of the proof and an appraisal of new facts and theories by setting down the evidence accumulated from many sources. Because of space, for one thing, but even more because of the objective in the textbook, polemics must not be engaged in, the relative merits of theories must not be weighed at length. Indeed, theories are dangerous to present as such, because of weakening the pedantic effect of such truthfully acknowledged uncertainties. Every one knows that a theory presented as a fact may be overruled even in the near future, but in a text unless there is very weak proof for a statement it may be given as fact. It remains for the research worker and profound student of a clinical subject to discourse at length about the relative merits of this or that evidence, present statistics and the pros and cons of any subject. As a rule such detailed consideration is above the undergraduate student and will discourage most of them. They look for something concrete if not brief, something that they can encompass and retain and put down in examinations. Journals are the fields for impractical irrelevancies, contentiousness and ultrascientific presentations.

Christopher's textbook of surgery is not brief. There are 1608 pages, including the index, and 728 illustrations. But this dangerous approach to being too long is certainly obscured by its excellent characteristics. The 174 contributors in by far the majority of instances are not only authorities but the authority on the subject on which they write, and the remaining minority are certainly authorities. Moreover, thanks to the editor the material is presented in a vigorous, forceful, authoritative manner that gives the impression that the contributors have not taken advantage of this opportunity to advance their own particular hobby or prove a point, and that they are thinking more of those who are to receive than themselves; that they are presenting the essence of knowledge on a subject. A preliminary survey of the anatomy and physiology of each subject is given, followed by modern knowledge of symptomatology and therapy. Technical operative procedures are given briefly but adequately. A brief bibliography is found at the end of each subject. Should one make a definite attempt, a few critical remarks could be made, but that would be an effort. The reviewer believes this is outstandingly the best single volume textbook of surgery available today for the student and practitioner.

HOWARD R. MAHORNER, M. D.

Roentgenographic Technique: By Darmon Artelle Rhinehart, A. M., M. D., F. A. C. R. 2d ed. Philadelphia. Lea & Febiger, pp. 430 with 183 engravings. Price, $5.50.

This is the second edition of a well known work on roentgenographic technic. Although the general plan of the book has not been changed, the text has been revised and recent advances in technic, one new chapter, and twenty-four new figures have been added.

The various parts of the unit roentgen ray machine are discussed and described. The author's discussion of dark room procedure is adequately covered. Due consideration is given to protection. Suggestions are made for positioning and proper control of the fundamental factors in the various anatomical regions. Of considerable interest is the author's discussion of various experimental procedures for the study of the relationship and variations of the fundamental factors. The figures and reproductions are very good and the technical directions of the text are clearly presented. The rather complete bibliography added to each chapter in addition to the text should make this book a valuable reference in the roentgen laboratory. It is recommended to all technicians, medical students and physicians who are interested in roentgenographic technic.

J. N. ANE, M. D.

A Textbook of Roentgenology: The Roentgen Ray in Diagnosis and Treatment: by Bede J. Michael Harrison, M. B., Ch. M., D. M. R. E., (Cantab.) F. A. C. R. Baltimore. William Wood & Co., 1936. pp. 888 with 238 illus. Price, $10.00.

Many splendid and complete studies have appeared on selected portions of roentgenology and radiology from time to time. The acquisition of

these works by the physician specializing in radiology was necessary. However, because of the limited field covered by each monograph, it was difficult and often impracticable for the physician, who was not specializing in radiology, to acquire or to study a sufficient number of these works to obtain a knowledge of roentgenology, adequate for his particular needs. Medical students likewise lacked a single complete textbook in roentgenology which considered this subject in terms of their pathological and clinical knowledge.

The author has admirably and adequately covered the entire field of roentgenology in a single volume, devoting more space to the more important conditions and correspondingly less to those conditions of less importance. This is probably the only complete textbook of roentgenology, in English, efficiently bridging the gap between pathology and roentgenology.

Special clinical laboratory findings are mentioned in those conditions where such findings are valuable to complete the picture. Roentgen therapy is considered in the light of the effect of irradiation on the special histological picture present in each condition.

The first six chapters of the book are devoted to the consideration of general subjects, such as physics, radio-physiology and biology, inflammation, and infection. One chapter deals with the dangers of x-ray and radium and the recommendations for protection. The remainder of the book consists of a division into chapters devoted to the various systems and organs. The normal roentgen anatomy of each organ or system is discussed at the beginning of each chapter. The various conditions peculiar to that organ or system are then considered with due regard to the pathological-roentgenological relationship. A complete index is added. It is unfortunate that space did not permit the addition of at least a brief bibliography on each subject.

This volume should prove of invaluable aid to medical students, internes, and physicians in all specialties. An accurate knowledge of the indications and limitations of the roentgen ray in each clinical condition may be obtained by the reader. It should aid in establishing closer cooperation between the internist and the roentgenologist. It should prove of much assistance to the roentgenologist as a reference book and also as a reminder of the close association of pathology and roentgenology.

LEON J. MENVILLE, M. D.

The Harvey Lectures, 1934-35: Delivered under the auspices of the Harvey Society of New York. Baltimore. Williams & Wilkins Co., 1936. pp. 270. Price $4.00.

This thirtieth series of lectures is so excellent that it is difficult to choose any particular one for comment, but of most interest to the clinician is probably the discussion of "Pneumothorax in the Treatment of Pneumonia", by Dr. Francis G. Blake, of Yale. The evolution of the pneumonic lesion is clearly and briefly discussed from several points of view and the conclusion reached is logical and based upon convincing data. The use of pneumothorax in the treatment of 42 cases of lobar pneumonia furnishes the basis of Dr. Blake's observations and he concludes that if this measure is to be of benefit it must be instituted early in the course of the disease and is likely to be of little or no value after 72 hours. The lecture of Dr. Wm. C. Rose on "The Significance of the Amino Acids in Nutrition" is a fascinating study leading to an understanding of the role of the components of the proteid molecule in diet, and perhaps pointing to the synthesis of a perfect nitrogenous food. It seems clear that many of the amino acids may be excluded from the diet without harm to nutrition, but that a considerable number are absolutely essential. It is admitted that all of the amino acids are not known, and that perhaps the most important of them are among these.

The volume is of attractive size and appearance. The print is excellent; there are no illustrations.

CHAILLE JAMISON, M. D.

PUBLICATIONS RECEIVED

Lea & Febiger, Philadelphia: Extra-Ocular Muscles by Luther C. Peter, A. M., M. D. Sc. D. The Diagnosis and Treatment of Pulmonary Tuberculosis by John B. Hawes, 2nd., M. D., and Moses J. Stone, M. D.

William Wood & Co., Baltimore: The Internation Medical Annual by H. Letheby Tidy, M. A., M. D., (Oxon.), F. R. C. P., and A. Rendle Short, M. D., B. C., B. Sc., F. R. C. S. The Study of Anatomy by S. E. Whitnall, M. A., M. D., B. Ch., (Oxon.), M. R. C. S., F. R. S. (Canada). Delafield and Prudden's Text-Book of Pathology by Francis Carter Wood, M. D.

C. V. Mosby Co., St. Louis: Exophthalmic Goiter and Its Treatment by Israel Bram, M. D. Synopsis of Diseases of the Heart and Arteries by George R. Herrmann, M. D., Ph. D.

J. B. Lippincott Co., Philadelphia: International Clinics by Louis Hamman, M. D.

Lancaster Press, Inc., Lancaster, Pa.: Tumors of the Bone by Charles F. Geschickter, M. D. and Murray M. Copeland, M. D.

Macmillan & Co., Ltd., London: Food Health and Income by John Boyd Orr. Syphilis and Its Treatment by William A. Hinton, M. D.

Williams & Wilkins Co., Baltimore: The Adrenals by Arthur Grollman, Ph. D., M. D.

The John F. Cuneo Co., Chicago: Medical Science Exhibits by Eben J. Carey, Sc. D., M. D.